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Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nesbitt mentioning Molitor '637 in view of Wu, as evidenced by Exhibit C.

Below is a claim chart identifying the claim limitations and which reference Nesbitt or Wu discloses, teaches or suggests the claim limitations. As reported in the Order granting reexamination, it needs to be correctly stated on the record that Nesbitt and Molitor '637 which is mentioned in Nesbitt teach the use of particular polyurethane materials for the use as an outer layer.

Claim 3	Nesbitt (primary) mentioning Molitor '637 with Wu (teaching)
A multi-layer golf ball comprising:	"The disclose embraces a golf ball and method of making same...." (Nesbitt, Abstract; FIGS 1 & 2)
a spherical core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or core formed as a solid body of resilient polymeric material or rubber-like material in the shape of a sphere." (Nesbitt, col. 2, ll. 31-34).
an inner cover layer having Shore D hardness of at least 60 disposed on said spherical core,	"Disposed on the spherical center or core 12 is a first layer, lamination, ply or inner cover 14 of molded hard, highly flexural modulus resinous material...." (Nesbitt, col. 2, ll. 34-37). "[I]nner cover 14 of molded hard, highly flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. DuPont de Nemours." (Nesbitt, col. 2, ll. 36-38). "[A] center or core 12 ... is molded with a layer of hard, high modulus SURLYN resin, such as SURLYN type 1605..." (Nesbitt, col. 3, ll. 27-29).
said inner cover layer comprising an ionomeric resin including no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid and	"Reference is made to the application Ser. No. 155,658, of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for one or both layers 14 [inner] and 16 [outer] for the golf ball of this invention." (Nesbitt, col. 3, ll. 56-61). <b>Molitor '637:</b> Molitor teaches, in examples 1-7, cover materials including a blend of two ionomer resins: SURLYN 1605 and SURLYN 1557. (Molitor '637, col. 14, l. 22 to col. 16, l. 34).
having a modulus of from about 15,000 to about 70,000 psi; and	see below
an outer cover layer having a Shore D hardness of about 64 or less disposed about said inner cover layer and defining a plurality of dimples to form a multi-layer golf ball,	<b>Nesbitt:</b> "Reference is made to the application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60). "[C]enter or core 12 and inner layer 14 of hard resinous material in the form of a sphere is then remolded into a dimpled golf ball of a diameter of 1.680 inches minimum with an outer or cover layer 16 of

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	<p>a soft, low flexural modulus resin such as SURLYN 1855.” (Nesbitt, col. 3, ll. 33-38 and Nesbitt, figure 1).</p> <p><b>Molitor ‘637:</b> Teaches the use of ESTANE 58133 in Examples 16 and 17. (Molitor ‘637, col. 18, ll. 32-60) See below why this cover material has inherently a Shore D hardness of 55.</p> <p><b>Wu:</b> “With polyurethanes made in accordance with the present invention, the degree of cure which has taken place is dependent upon, inter alia, the time, temperature, type of curative, and amount of catalyst used. It has been found that the degree of cure of the cover composition is directly proportional to the hardness of the composition. A hardness about 10D to 30D, Shore D hardness for the cover stock at the end of the intermediate curing step (i.e. just prior to the final molding step) has been found to be suitable for the present invention. More preferred is a hardness of about 12D to 20D.” (Wu, col. 6, ll. 27-38).</p>
said outer cover layer comprising a polyurethane based material and	<p><b>Molitor ‘637:</b> See TABLE 10 which teaches ESTANE 58133 is a thermoplastic polyurethane, thus is a polyurethane based material. Moreover, Molitor ‘637 teaches the cover materials include “polyurethanes such as are prepared from polyols and organic polyisocyanates”. (Molitor ‘637, col. 5, ll. 39-41; col. 18, ll. 32-60 (Examples 16 and 18)).</p>
said outer cover layer having a thickness of from about 0.010 to about 0.070 inches.	<p>“The thickness of the outer layer or cover 16 of soft, low flexural modulus resin such as SURLYN type 1855, may be in the range of 0.020 inches and 0.100 inches.” (Nesbitt, col. 3, ll. 22-25).</p>

As mentioned above, Nesbitt references Molitor ‘637 as describing an number of compositions suitable for the inner cover layer 14. Of particular interest in this case are Examples 1-7 within Molitor ‘637. Examples 1-7 use a ratio of SURLYN 1605 and SURLYN 1557. The use of SURLYN grades for golf ball covers is also disclosed in U.S. Pat. No. 4,690,981. The preferred composition in the ‘981 Patent has “from about 5[%] to about 15% by weight of unsaturated carboxylic acid.” ‘981 Pat., col. 3, ll. 59-60. Those of ordinary skill in the art understand that SURLYN 1605 has been “redesignated” as SURLYN 8940 and SURLYN 1557 has been “redesignated” as SURLYN 9650, see e.g. U.S. Pat. No. 4,679,795, col. 6, ll. 10-15 and U.S. Pat. No. 5,150,906, col. 4, ll. 66. Furthermore, the Patent Owner in the Sullivan ‘873 Patent admitted that SURLYN 1605 is now designated as 8940 and was used in Nesbitt’s first (inner) layer and is a sodium ion based low acid “(less than or equal to 15 weight percent

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methacrylic acid) ionomer resin having a flexural modulus of about 51,000 psi.” See ‘873 Patent, col. 2, ll. 43-50. Moreover, as shown in the “Properties Grid for Selected Industrial Grades of SURLYN” SURLYN 9650’s ordinate compared to the other grades of SURLYN is toward the “Low % Acid” side of the graph. Thus, based on this evidence, Nesbitt referencing Molitor ‘637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid. Moreover, as stated above, it has been identified that one resin in Nesbitt has a flexural modulus of 51,000 psi. This teaching of flexural modulus falls within the range claimed (15,000 psi to 70,000 psi).

As mentioned above, Nesbitt mentioning Molitor ‘637 teaches the use of particular polyurethane materials for the use as an outer layer. Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that SURLYN covered golf balls lack the “click” and “feel” of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar “click” and “feel” of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. This teaching of Shore D hardness is directed to an intermediate curing step product prior to the final molding process to finish the golf ball. Exhibit C demonstrates the actual finished golf ball product having the cover layer that Wu teaches within its disclosure. Exhibit C teaches that the golf ball taught therein is covered by the following patents: 4,783,078; 4,846,910; 4,858,923; 4,904,320; 4,915,390; 5,007,594; 5,080,367; 5,133,509; **5,334,673**; and D339,074. The ‘673 Patent teaches the cover sock of the Exhibit C finished golf ball. Exhibit C teaches that the golf

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ball taught therein has a cover material made from an “elastomer”, having a thickness of .050”, and 58 Shore D hardness. All three properties are within the range of mechanical properties of the claim invention (polyurethane is an elastomer, cover layer thickness ranges from 0.010 to 0.070 inches and the Shore D hardness is less than 64). Because it has been admitted by the inventor of the Sullivan ‘893 patent that the particular chemical properties of the materials (the chemical composition) used in the construction of a golf ball lack criticality as compared to the mechanical properties (the Shore D hardness, flexural modulus, layer thickness) of those compounds used for constructing the different layers (Exhibit G at 334), one of ordinary skill in the art at the time the invention was made would find it obvious to incorporate the teachings of Wu which inherently include the teachings of Shore hardness for the fully cured cover layer as taught in Exhibit C as obvious equivalent materials in order to achieve the same end result of providing a cover layer that has the same “click” and “feel” of a balata cover which the extra durability of an elastomeric material.

This rejection of claim 3 based on Nesbitt mentioning Molitor ‘637 in view of Wu as evidenced by Exhibit C was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

#### Ground 17: Patent Owner’s Argument

Patent Owner does not specifically argue this rejection. The arguments are the same as those at “Ground 3: Patent Owner’s Argument,” *supra*.

#### Ground 17: Third Party Requester’s Comments

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Third Party Requester does not specifically counter argue this rejection. The counter arguments are the same as those at "Ground 3: Third Party Requester's Comments," *supra*.

#### Ground 17: Examiner's Response to the Argument and Comments

Examiner agrees with the general comments of the Third Party Requester, and the rejection of claim 3 under 35 USC 103(a) as being obvious by Nesbitt in view of Wu is maintained. See "Ground 3: Examiner's Response to the Argument and Comments," *supra*.

#### **Proposed third party requester rejection: Ground #18**

The requester submits on pages 38 through 40 that claim 3 under 35 U.S.C. § 103(a) as being obvious over Nesbitt, U.S. Pat. No. 4,431,193, in view of Molitor et al., U.S. Pat. No. 4,674,751, (Molitor '751).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nesbitt mentioning Molitor '637 in view of Molitor '751.

Below is a claim chart identifying the claim limitations and where Nesbitt discloses, teaches or suggests the claim limitations. As reported in the Order granting reexamination, it needs to be correctly stated on the record that Nesbitt and Molitor '637 which is mentioned in Nesbitt teach the use of particular polyurethane materials for the use as an outer layer .

Claim 3	Nesbitt (primary) mentioning Molitor '637 with Molitor '751 (teaching)
A golf ball comprising:	"The disclosure embraces <b>a golf ball</b> and method of making the same..." (Nesbitt, Abstract; and FIGS. 1 & 2)
a spherical core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises <b>a solid center or core</b> formed as a solid

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	body of resilient polymeric material or rubber-like material in the shape of a <b>sphere</b> . (Nesbitt, col. 2, ll. 31-34).
an inner cover layer having Shore D hardness of at least 60 disposed on said spherical core,	<p>"Disposed on the spherical center or core 12 is a first layer, lamination, ply or <b>inner cover</b> 14 of molded hard, highly flexural modulus resinous material...." (Nesbitt, col. 2, ll. 34-37).</p> <p>"[I]nner cover 14 of molded hard, highly flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. DuPont de Nemours." (Nesbitt, col. 2, ll. 36-38).</p> <p>"[A] center or core 12 ... is molded with a layer of hard, high modulus SURLYN resin, such as SURLYN type 1605..." (Nesbitt, col. 3, ll. 27-29).</p> <p>also see below</p>
said inner cover layer comprising an ionomeric resin including no more than 16% by weight of alpha, beta-unsaturated carboxylic acid; and	<p>"Reference is made to the application Ser. No. 155,658 of Robert P. <b>Molitor</b> issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers 14 ... for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60).</p> <p><b>Molitor '637</b>: Molitor teaches, in examples 1-7, cover materials including a blend of two ionomer resins: SURLYN 1605 and SURLYN 1557. (Molitor '637, col. 14, l. 22 to col. 16, l. 34).</p>
having a modulus of from about 15,000 to about 70,000 psi; and	see below
an outer cover layer having a Shore D hardness of about 64 or less disposed on said inner cover layer and defining a plurality of dimples to form a multi-layer golf ball,	<p>"An <b>outer layer</b>, ply, lamination or <b>cover</b> 16 ... is then <b>remolded onto the inner ply or layer 14</b> ..." (Nesbitt, col. 2, ll. 43-47).</p> <p>"[C]enter or core 12 and inner layer 14 of hard resinous material in the form of a sphere is then remolded into a dimpled golf ball of a diameter of 1.680 inches minimum with an <b>outer or cover layer 16 of a soft, low flexural modulus resin such as SURLYN 1855</b>." (Nesbitt, col. 3, ll. 33-38 and Nesbitt, figure 1).</p> <p>"Reference is made to the application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60).</p> <p>See figure 1 of Nesbitt for the disclosure of a plurality of dimples on the outer layer.</p>
said outer cover layer comprising a polyurethane material and	<b>Molitor '637</b> : ESTANE 58133 is a polyurethane material. (Molitor, col. 18)
said outer cover layer having a thickness of 0.010 to 0.070 inches,	"The <b>thickness of the outer layer or cover 16</b> of soft, low flexural modulus resin such as SURLYN type 1855, <b>may be in the range of 0.020 inches and 0.100 inches</b> ." (Nesbitt, col. 3, ll. 22-25).

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As shown above in the claim chart, Nesbitt mentioning Molitor '637 suggests the use of a soft outer cover layer including a polyurethane material. In an analogous golf ball, Molitor '751 teaches that:

**It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core a cover having a shore C hardness less than 85, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a thermoplastic urethane having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55.**

(Molitor '751, col. 2, ll.33-49 (emphasis added)).

Moreover, in explaining what constitutes a two-piece golf ball, Molitor '751 teaches that:

**The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, but also includes balls having a separate solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt, and other balls have non-wound cores.**

(Molitor '751, col. 3, ll. 7-12 (emphasis added)).

As stated above, Molitor '751 teaches the cover of the golf ball has a Shore C hardness of less than 85, preferably 70-80, most preferably 72-76. As described in Molitor '751's TABLE bridging columns 7 and 8, Sample 8 constitutes one of the preferred embodiments and its cover is taught to have a Shore C hardness of 73. Patent Owner has admitted that a Shore C hardness of 73 is equal to a Shore D hardness of 47, see U.S. Pat. No. 6,905,648, Table 19 (Exhibit L). Thus, a cover having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

How one of ordinary skill in the art would discover this inherent mechanical property of Shore D hardness for the polyurethane material used in Molitor '751 is by "translating" a Shore C value to a Shore D value for the polyurethane material. How one of ordinary skill in the art

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“translates” a Shore C value to a Shore D value is by taking the known Shore hardness values with a given range, in this instance Shore C, for given materials, in this instance polyurethane golf ball covers materials, and taking corresponding measurements with a different set of Shore gauges, in this instance Shore D (but could also be Shore A). A resulting trendline plot occurs from performing this procedure wherein the range of known Shore C values are the abscissa and the range of measured Shore D values are the ordinate. Then, said plot can be use to read equivalent Shore D value for any given Shore C value within the known range of Shore C. This is how one of ordinary skill in the art can know the equivalent Shore D or even Shore A hardness value for any given Shore C hardness value.

As stated in the request on page 39

It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the soft outer cover layer of Nesbitt and replace it with an outer cover layer made of the soft polyurethane material taught by Molitor '751 to provide a golf ball that includes “playability properties as good or better than balata-covered wound balls but are significantly more durable,” and “have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot” while having improved puttability. (Molitor '751, col. 2, ll. 61-68)

As mentioned above, Nesbitt references Molitor '637 as describing an number of compositions suitable for the inner cover layer 14. Of particular interest in this case are Examples 1-7 within Molitor '637. Examples 1-7 use a ratio of SURLYN 1605 and SURLYN 1557. The use of SURLYN grades for golf ball covers is also disclosed in U.S. Pat. No. 4,690,981. The preferred composition in the '981 Patent has “from about 5[%] to about 15% by weight of unsaturated carboxylic acid.” '981 Pat., col. 3, ll. 59-60. Those of ordinary skill in the art understand that SURLYN 1605 has been “redesignated” as SURLYN 8940 and SURLYN 1557 has been “redesignated” as SURLYN 9650, see e.g. U.S. Pat. No. 4,679,795, col. 6, ll. 10-



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15 and U.S. Pat. No. 5,150,906, col. 4, ll. 66. Furthermore, the Patent Owner in the Sullivan '873 Patent admitted that SURLYN 1605 is now designated as 8940 and was used in Nesbitt's first (inner) layer and is a sodium ion based low acid "(less than or equal to 15 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 51,000 psi." See '873 Patent, col. 2, ll. 43-50. Moreover, as shown in the "Properties Grid for Selected Industrial Grades of SURLYN" SURLYN 9650's ordinate compared to the other grades of SURLYN is toward the "Low % Acid" side of the graph. Thus, based on this evidence, Nesbitt referencing Molitor '637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid. Moreover, as stated above, it has been identified that one resin in Nesbitt has a flexural modulus of 51,000 psi. This teaching of flexural modulus falls within the range claimed (15,000 psi to 70,000 psi).

This rejection of claim 3 based on Nesbitt mentioning Molitor '637 in view of Molitor '751 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

#### Ground 18: Patent Owner's Argument

Patent Owner does not specifically argue this rejection. The arguments are the same as those at "Ground 4: Patent Owner's Argument," *supra*.

#### Ground 18: Third Party Requester's Comments

Third Party Requester does not specifically counter argue this rejection. The counter arguments are the same as those at "Ground 4: Third Party Requester's Comments," *supra*.

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**Ground 18: Examiner's Response to the Argument and Comments**

Examiner agrees with the general comments of the Third Party Requester, and the rejection of claim 3 under 35 USC 103(a) as being obvious by Nesbitt in view of Molitor '751 is maintained. See "Ground 4: Examiner's Response to the Argument and Comments," *supra*.

**Proposed third party requester rejection: Ground #19**

The requester submits on pages 40 through 43 that claim 3 under 35 U.S.C. § 103(a) as being obvious over Proudfit in view of Molitor '637.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Proudfit in view of Molitor '637.

Below is a claim chart identifying the claim limitations and where Proudfit discloses, teaches or suggests certain claim limitations.

Claim 3	Proudfit
A multi-layer golf ball comprising:	"This <b>invention relates to golf balls</b> , and more particularly, to a golf ball having a two-layer cover." (Proudfit, col. 1, ll. 11-12)
a spherical core;	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid <b>core 11</b> and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (Proudfit, col. 7, ll. 21-24; Figs 1 and 2) "Two specific solid core compositions used with the new two-layer cover had the composition describe in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball." (Proudfit, col. 7, ll. 51-55) See figure 1 of Proudfit for the disclosure of a spherical shaped

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	core.								
an inner cover layer having Shore D hardness of at least 60 disposed on said spherical core,	<p>"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a <b>cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins</b> and a relatively soft outer layer 14 of polymeric material." (Proudfit, col. 7, ll. 21-24)</p> <p>See below for Shore D limitation.</p>								
said inner cover layer comprising an ionomeric resin including no more than 16% by weight of alpha, beta-unsaturated carboxylic acid;	<p>"The composition of the inner cover layer is described in Table 6."</p> <p style="text-align: center;"><b>TABLE 6</b></p> <table border="1"> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> </thead> <tbody> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </tbody> </table> <p>(Proudfit, col. 8, ll. 22-30)</p> <p>See below for % by weight limitation.</p>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Composition of Inner Layer of Cover (Parts by Weight)									
Ionomer Type	Blend Ratio								
Sodium- Surlyn 8940	75%								
Zinc- Surlyn 9910	25%								
and having a modulus of from about 15,000 to about 70,000 psi; and	<p>"The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as "hard SURLYNS" in U.S. Patent No. 4,884,814." (Proudfit, col. 5, l. 66 - col. 6, l. 1.)</p> <p>"Specific standard SURLYN resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc)...." (Proudfit, col. 6, ll. 6-7.)</p>								
an outer cover layer having a Shore D hardness of about 64 or less disposed about said inner cover layer and defining a plurality of dimples to form a multi-layer golf ball,	<p>"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a <b>cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material.</b>" (Proudfit, col. 7, ll. 21-24)</p> <p>"... an <b>outer layer</b> of soft material such as balata or a <b>blend of balata and other elastomers.</b>" (Proudfit, col. 5, ll. 15-17)</p> <p>This material inherently has a Shore D hardness of less than 64, see the reasoning below.</p>								
and said outer cover layer comprising a polyurethane material and	<p>"... an <b>outer layer</b> of soft material such as balata or a <b>blend of balata and other elastomers.</b>" (Proudfit, col. 5, ll. 15-17)</p>								
said outer cover layer having a thickness of 0.010 to 0.070 inches,	<p>"The thickness of the outer layer can be within the range of about 0.0450 to 0.0650 inch to provide a total ball diameter of 1.680 inch. The preferred dimensions are ... an outer layer thickness of 0.0525 inch...." (Proudfit, col. 7, ll. 40-46)</p>								

As shown above Proudfit discloses, teaches and suggests a three-piece golf ball (core, inner layer and outer layer) with the layers within the range of claimed thicknesses each layer

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made from a material having the mechanical properties substantially similar to the claimed mechanical properties. What Proudfit lacks in clearly disclosing are the particular mechanical and chemical properties of the claimed invention. However, Proudfit either incorporates by reference these mechanical and chemical properties and/or the materials used within the Proudfit golf ball inherently have these mechanical and chemical properties. For instance, Proudfit incorporates by reference U.S. Pat. No. 4,690,981 in the background of this invention. (Proudfit, col. 1, ll.39-43). The '981 patent discloses the preferably amount of unsaturated carboxylic acid is "from about 5[%] to about 15% by weight." ('981 Pat, col. 3, ll. 59-60). If Proudfit discloses using blends SURLYN the chemical for making the inner cover and the '981 Patent is the formulation for ionomer known in the art as SURLYN, then inherently grades of SURLYN such as SURLYN 8940 and SURLYN 9910 would be low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid. As taught from Exhibit I, SURLYN 8940 has a Shore D hardness of 65; SURLYN 9910 has a Shore D hardness of 64, see Exhibit I. Therefore, this cover blend inherently has a hardness of 60 or more. Proudfit discloses the outer layer being a blend of balata. An example of the blend is disclosed in Table 7 reproduced below.

<b>TABLE 7</b>	
<b>Composition of Outer Layer</b>	
<b>(Parts by Weight)</b>	
Trans PolyIsoprene (TP-301)	60.00
Polybutadiene	40.00
Zinc Oxide	1.00
Titanium DiOxide	17.00
Ultramarine Blue color	.50
Zinc DiAcrylate	33.00
Peroxide (Veron 230 XL)	2.50
<b>Total</b>	<b>160.00</b>

Note that Trans PolyIsoprene is basically the chemical name for balata and Polybutadiene is one of the first types of synthetic rubber or elastomer. As described in the Rule 132 Declaration of

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Edmund A. Hebert, the outer cover layer disclosed in Proudfit is the outer cover layer for the golf ball disclosed in Exhibit A and that cover has a Shore D hardness of 52. Thus, Proudfit's outer layer cover inherently has a Shore hardness of less than 64.

While Proudfit lacks disclosing the outer layer being made from polyurethane, in an analogous golf ball, Molitor '637 teaches using polyurethane, see Molitor '637, col. 5, ll. 33-41 and col. 18, examples 16 and 17. The request points out on page 42, ll. 17-25, why the use of polyurethane to one of ordinary skill in the art would be readily apparent given that those skilled in the art were more critical of the mechanical properties of a particular material than the chemical composition (material type) of the material and those remarks are incorporated herein. In other words, it was not critical to the "golf ball inventions" of those skilled in the art as to what materials were used to construct the golf balls so long as the materials had the desired mechanical properties which would yield the particular mechanical performance parameters the inventors were trying to achieve, e.g. improved processability; improved durability; cost effectiveness; user acceptance of performance (similar "click" and "feel" to balata) of the golf ball product made from those materials. The request on page 43, ll. 1-9, explains why one of ordinary skill in the art would be motivated to substitute the outer cover layer taught in Molitor '637 for the outer cover layer disclosed in Proudfit and those remarks are incorporated herein.

Therefore, one of ordinary skill in the art would find the claimed invention as obvious for the motivation given in the request on page 43, ll. 1-9.

This rejection of claim 3 based on Proudfit in view of Molitor '637 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

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#### Ground 19: Patent Owner's Argument

Patent Owner does not specifically argue this rejection. The arguments are the same as those at "Ground 5: Patent Owner's Argument," *supra*.

#### Ground 19: Third Party Requester's Comments

Third Party Requester does not specifically counter argue this rejection. The counter arguments are the same as those at "Ground 5: Third Party Requester's Comments," *supra*.

#### Ground 19: Examiner's Response to the Argument and Comments

Examiner agrees with the general comments of the Third Party Requester, and the rejection of claim 3 under 35 USC 103(a) as being obvious by Proudfit in view of Molitor '637 is maintained. See "Ground 5: Examiner's Response to the Argument and Comments," *supra*.

#### **Proposed third party requester rejection: Ground #20**

The requester submits on pages 43 through 45 that claim 3 under 35 U.S.C. § 103(a) as being obvious over Proudfit, U.S. Pat. No. 5,314,187, in view of Wu, U.S. Pat. No. 5,334,673 (Wu).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Proudfit in view of Wu, as evidenced by Exhibit C.

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Below is a claim chart identifying the claim limitations and where Proudfit discloses, teaches or suggests certain claim limitations.

Claim 3	Proudfit						
A multi-layer golf ball comprising:	"This <b>invention relates to golf balls</b> , and more particularly, to a golf ball having a two-layer cover." (Proudfit, col. 1, ll. 11-12)						
a spherical core;	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid <b>core 11</b> and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (Proudfit, col. 7, ll. 21-24; Figs 1 and 2) "Two specific solid core compositions used with the new two-layer cover had the composition describe in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball." (Proudfit, col. 7, ll. 51-55) See figure 1 of Proudfit for spherical shaped core.						
an inner cover layer having Shore D hardness of at least 60 disposed on said spherical core,	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a <b>cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins</b> and a relatively soft outer layer 14 of polymeric material." (Proudfit, col. 7, ll. 21-24) See below with respect to the Shore D limitation						
said inner cover layer comprising an ionomeric resin including no more than 16% by weight of alpha, beta-unsaturated carboxylic acid;	"The composition of the inner cover layer is described in Table 6." <div style="text-align: center;"> <b>TABLE 6</b>  <hr/> <b>Composition of Inner Layer of Cover</b>  <b>(Parts by Weight)</b>  <hr/> <table> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </table> <hr/> </div> (Proudfit, col. 8, ll. 22-30) See below for the % by weight limitation.	Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Ionomer Type	Blend Ratio						
Sodium- Surlyn 8940	75%						
Zinc- Surlyn 9910	25%						
and having a modulus of from about 15,000 to about 70,000 psi; and	"The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as "hard SURLYNS" in U.S. Patent No. 4,884,814." (Proudfit, col. 5, l. 66 - col. 6, l. 1.) "Specific standard SURLYN resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc)...." (Proudfit, col. 6, ll. 6-7.)						
an outer cover layer having a Shore D hardness of about 64 or less disposed	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a <b>cover 12</b> which comprises a relatively hard inner						

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about said inner cover layer and defining a plurality of dimples to form a multi-layer golf ball,	layer 13 of one or more ionomer resins <b>and a relatively soft outer layer 14 of polymeric material.</b> (Proudfit, col. 7, ll. 21-24) “... an <b>outer layer</b> of soft material such as balata or a <b>blend of balata and other elastomers.</b> ” (Proudfit, col. 5, ll. 15-17) This material inherently has a Shore D hardness of less than 64, see the reasoning below.
and said outer cover layer comprising a polyurethane material and	“... an <b>outer layer</b> of soft material such as balata or a <b>blend of balata and other elastomers.</b> ” (Proudfit, col. 5, ll. 15-17)
said outer cover layer having a thickness of 0.010 to 0.070 inches,	“The thickness of the outer layer can be within the range of about 0.0450 to 0.0650 inch to provide a total ball diameter of 1.680 inch. The preferred dimensions are ... an outer layer thickness of 0.0525 inch....” (Proudfit, col. 7, ll. 40-46)

Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that SURLYN covered golf balls lack the “click” and “feel” of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar “click” and “feel” of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. This teaching of Shore D hardness is directed to an intermediate curing step product prior to the final molding process to finish the golf ball. Exhibit C demonstrates the actual finished golf ball product having the cover layer that Wu teaches within its disclosure. Exhibit C teaches that the golf ball taught therein is covered by the following patents: 4,783,078; 4,846,910; 4,858,923; 4,904,320; 4,915,390; 5,007,594; 5,080,367; 5,133,509; **5,334,673**; and D339,074. The ‘673 Patent teaches the cover sock of the Exhibit C finished golf ball. Exhibit C teaches that the golf ball taught therein has a cover material made from an “elastomer”, having a thickness of .050”, and 58 Shore D hardness. All three properties are within the range of mechanical properties of the claim invention



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(polyurethane is an elastomer, cover layer thickness ranges from 0.010 to 0.070 inches and the Shore D hardness is less than 64). Because it has been admitted by the inventor of the Sullivan '893 patent that the particular chemical properties of the materials (the chemical composition) used in the construction of a golf ball lack criticality as compared to the mechanical properties (the Shore D hardness, flexural modulus, layer thickness) of those compounds used for constructing the different layers (Exhibit G at 334), one of ordinary skill in the art at the time the invention was made would find it obvious to incorporate the teachings of Wu which inherently include the teachings of Shore hardness for the fully cured cover layer as taught in Exhibit C as obvious equivalent materials in order to achieve the same end result of providing a cover layer that has the same "click" and "feel" of a balata cover with the extra durability of an elastomeric material.

This rejection of claim 3 based on Proudfit in view of Wu as evidenced by Exhibit C was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

#### Ground 20: Patent Owner's Argument

Patent Owner does not specifically argue this rejection. The arguments are the same as those at "Ground 6: Patent Owner's Argument," *supra*.

#### Ground 20: Third Party Requester's Comments

Third Party Requester does not specifically counter argue this rejection. The counter arguments are the same as those at "Ground 6: Third Party Requester's Comments," *supra*.

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**Ground 20: Examiner's Response to the Argument and Comments**

Examiner agrees with the general comments of the Third Party Requester, and the rejection of claim 3 under 35 USC 103(a) as being obvious by Proudfit in view of Wu is maintained. See "Ground 6: Examiner's Response to the Argument and Comments," *supra*.

**Proposed third party requester rejection: Ground #21**

The requester submits on pages 43 through 45 that claim 3 under 35 U.S.C. § 103(a) as being obvious over Proudfit in view of Molitor '751.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Proudfit in view of Molitor '751.

Below is a claim chart identifying the claim limitations and where Proudfit discloses, teaches or suggests certain claim limitations.

Claim 3	Proudfit
A multi-layer golf ball comprising:	"This <b>invention relates to golf balls</b> , and more particularly, to a golf ball having a two-layer cover." (Proudfit, col. 1, ll. 11-12)
a spherical core;	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid <b>core 11</b> and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (Proudfit, col. 7, ll. 21-24; Figs 1 and 2) "Two specific solid core compositions used with the new two-layer cover had the composition describe in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball." (Proudfit, col. 7, ll. 51-55) See figure 1 of Proudfit for spherical shaped core.

an inner cover layer having Shore D hardness of at least 60 disposed on said spherical core,	<p>"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a <b>cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins</b> and a relatively soft outer layer 14 of polymeric material." (Proudfit, col. 7, ll. 21-24)</p> <p>See below with respect to the Shore D limitation.</p>						
said inner cover layer comprising an ionomeric resin including no more than 16% by weight of alpha, beta-unsaturated carboxylic acid;	<p>"The composition of the inner cover layer is described in Table 6."</p> <div style="text-align: center;"> <p><b>TABLE 6</b></p> <p><b>Composition of Inner Layer of Cover</b> <b>(Parts by Weight)</b></p> <table> <tr> <th><b>Ionomer Type</b></th><th><b>Blend Ratio</b></th></tr> <tr> <td>Sodium- Surlyn 8940</td><td>73%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>23%</td></tr> </table> </div> <p>(Proudfit, col. 8, ll. 22-30)</p> <p>See below with respect to the % by weight limitation.</p>	<b>Ionomer Type</b>	<b>Blend Ratio</b>	Sodium- Surlyn 8940	73%	Zinc- Surlyn 9910	23%
<b>Ionomer Type</b>	<b>Blend Ratio</b>						
Sodium- Surlyn 8940	73%						
Zinc- Surlyn 9910	23%						
and having a modulus of from about 15,000 to about 70,000 psi; and	<p>"The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as "hard SURLYNS" in U.S. Patent No. 4,884,814." (Proudfit, col. 5, l. 66 - col. 6, l. 1.)</p> <p>"Specific standard SURLYN resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc)...." (Proudfit, col. 6, ll. 6-7.)</p>						
an outer cover layer having a Shore D hardness of about 64 or less disposed about said inner cover layer and defining a plurality of dimples to form a multi-layer golf ball;	<p>"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a <b>cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material.</b>" (Proudfit, col. 7, ll. 21-24)</p> <p>"... an <b>outer layer</b> of soft material such as balata or a <b>blend of balata and other elastomers.</b>" (Proudfit, col. 5, ll. 15-17)</p> <p>This material inherently has a Shore D hardness of less than 64, see the reasoning below.</p>						
and said outer cover layer comprising a polyurethane material and	<p>"... an <b>outer layer</b> of soft material such as balata or a <b>blend of balata and other elastomers.</b>" (Proudfit, col. 5, ll. 15-17)</p>						
said outer cover layer having a thickness of 0.010 to 0.070 inches,	<p>"The thickness of the outer layer can be within the range of about 0.0450 to 0.0650 inch to provide a total ball diameter of 1.680 inch. The preferred dimensions are ... an outer layer thickness of 0.0525 inch...." (Proudfit, col. 7, ll. 40-46)</p>						

As expressed in the request on page 45 and identified above within the claim chart,

Proudfit teaches a golf ball have a two-piece cover including a hard, ionomeric inner cover layer and a soft balata blend outer cover layer. Proudfit lacks in disclosing the use of polyurethane as

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the material for the outer cover layer. Instead, as shown in Table 7, reproduced below, Proudfit discloses the outer cover layer being made of a blend of balata.

<b>TABLE 7</b>	
<b>Composition of Outer Layer (Parts by Weight)</b>	
Trans Polyisoprene (TP-301)	60.00
Polybutadiene	40.00
Zinc Oxide	1.00
Titanium Dioxide	17.00
Ultramarine Blue color	.50
Zinc DiAcrylate	31.00
Peroxide (Varox 230 XL)	2.50
<b>Total</b>	<b>162.00</b>

However, those skilled in the art understand the disadvantages of balata covered golf balls. As admitted by the patent owner

Despite all the benefits of balata, balata covered golf balls are easily cut and/or damaged if mis-hit. Golf balls produced with balata or balata-containing cover compositions therefore have a relatively short lifespan.

(Sullivan '873, col. 1, ll. 39-42). With this disadvantage of balata covered golf balls, golf ball designers looked for materials that would provide the same "click" and "feel" golfers expected and have increased durability.

As pointed out in the request on page 45, lines 11-15, in an analogous golf ball, Molitor '751 teaches that:

It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core a cover having a shore C hardness less than 85, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a thermoplastic urethane having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55. The ionomer comprises olefinic groups having two to four carbon atoms copolymerized with acrylic or methacrylic acid groups and cross-linked with metal ions, preferably sodium or zinc ions. The primary components of the blended cover are set at a weight ratio so as to result in a cover material after molding having a shore C hardness within the range of 70 to 85, preferably 72 to 76. Preferably, the urethane component of the cover material has a tensile strength greater than 2500 psi and an elongation at break greater than 250%. A preferred cover material comprises about 8 parts of the thermoplastic urethane and between 1 and 4 parts ionomer. Preferably, the cover is no greater than 0.060 inch thick. Thinner covers appear to maximize the short iron playability characteristics of the balls.

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(Molitor '751, col. 33-57 (emphasis added)). Thus, Molitor '751 teaches having a outer cover layer with a Shore C hardness less than 85 and preferably between 72 and 76. Moreover, Molitor '751 teaches what golf balls are included in the definition of "two-piece" ball within its instant specification.

The phrase "two-piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, **but also includes balls having a separate solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt, and other balls having non-wound cores.**

Molitor '751, col. 3, ll. 7-12 (emphasis added)). Proudfit, likewise, teaches the two-piece golf balls can fit within this definition.

FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material.

(Proudfit, col. 7, ll. 21-24).

As stated above, Molitor '751 teaches the cover of the golf ball has a Shore C hardness of less than 85, preferably 70-80, most preferably 72-76. As described in Molitor '751's TABLE bridging columns 7 and 8, Sample 8 constitutes one of the preferred embodiments and its cover is taught to have a Shore C hardness of 73. Patent Owner has admitted that a Shore C hardness of 73 is equal to a Shore D hardness of 47, see U.S. Pat. No. 6,905,648, Table 19 (Exhibit L). Thus, a cover having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

How one of ordinary skill in the art would discover this inherent mechanical property of Shore D hardness for the polyurethane material used in Molitor '751 is by "translating" a Shore C value to a Shore D value for the polyurethane material. How one of ordinary skill in the art "translates" a Shore C value to a Shore D value is by taking the known Shore hardness values with a given range, in this instance Shore C, for given materials, in this instance a polyurethane

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golf ball covers materials, and taking corresponding measurements with a different set of Shore gauges, in this instance Shore D (but could also be Shore A). A resulting trendline plot occurs from performing this procedure wherein the range of known Shore C values are the abscissa and the range of measured Shore D values are the ordinate. Then, said plot can be use to read equivalent Shore D value for any given Shore C value within the known range of Shore C. This is how one of ordinary skill in the art can know the equivalent Shore D or even Shore A hardness value for any given Shore C hardness value.

As stated in the request on page 46

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the soft outer cover layer of Nesbitt and replace it with an outer cover layer made of the soft polyurethane material taught by Molitor '751 to provide a golf ball that includes "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, ll. 61-68)

This rejection of claim 3 based on Proudfit in view of Molitor '751 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

#### Ground 21: Patent Owner's Argument

Patent Owner does not specifically argue this rejection. The arguments are the same as those at "Ground 7: Patent Owner's Argument," *supra*.

#### Ground 21: Third Party Requester's Comments

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Third Party Requester does not specifically counter argue this rejection. The counter arguments are the same as those at "Ground 7: Third Party Requester's Comments," *supra*.

#### Ground 21: Examiner's Response to the Argument and Comments

Examiner agrees with the general comments of the Third Party Requester, and the rejection of claim 3 under 35 USC 103(a) as being obvious by Nesbitt in view of Molitor '751 is maintained. See "Ground 7: Examiner's Response to the Argument and Comments," *supra*.

#### Re. Claim 4

#### **Proposed third party requester rejection: Ground #22**

The requester submits on pages 47 and 48 of the request that claim 4 is unpatentable under 35 U.S.C. § 102(b) as being anticipated by Nesbitt, U.S. Pat. No. 4,431,193, (Nesbitt).

In the request on pages 47 through 48 the third party requester proposes that claim 3 be rejected based upon Nesbitt alone with the incorporation by reference of Molitor '637. The third party requester points out that Molitor '637 is incorporated by reference into Nesbitt because Nesbitt refers to Molitor '637. (See Nesbitt col. 3, ll. 54-60).

**This rejection is adopted in this office action.**

Claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt in view of Molitor '637.

The below claim chart identifies the new limitations introduced by dependent claim 4.

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Claim 4	Nesbitt
wherein said inner cover layer has a thickness of about 0.050 inches, and	"It is found that the inner layer of hard, high flexural modulus resinous material such as SURLYN resin type 1605, is preferably of a thickness in a range of 0.020 inches and 0.070 inches." (Nesbitt, col. 3, ll. 19-23).
said outer cover layer has a thickness of about 0.055 inches,	"The thickness of the outer layer or cover 16 of soft, low flexural modulus resin such as SURLYN type 1855, may be in the range of 0.020 inches and 0.100 inches." (Nesbitt, col. 3, ll. 22-25).
said golf ball having an overall diameter of 1.680 inches or more.	"According to the United States Golf Association Rules, the minimum diameter prescribed for a golf ball is 1.680 inches...." (Nesbitt, col. 2: ll. 50-52.) "This center or core 12 and inner layer 14 of hard resinous material in the form of a sphere is then remolded into a dimpled golf ball of a diameter of 1.680 inches minimum with an outer or cover layer 16 of a soft, low flexural modulus resin ...." (Nesbitt, col. 3, ll. 34-38.)

Thus, because all new limitations of claim 4 are found within Nesbitt and from the above analysis within Ground #16 claim 3 is anticipated by with incorporation by reference of Molitor '637, claim 4 is likewise anticipated by Nesbitt with incorporation by reference of Molitor '637.

This rejection of claim 4 based on Nesbitt with incorporation by reference of Molitor '637 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

#### Ground 22: Patent Owner's Argument

Patent Owner does not argue this rejection.

#### Ground 22: Third Party Requester's Comments

Third Party Requester's arguments for this claim are the same as given *supra* at "Ground 1: Third Party Requester's Comments."

#### Ground 22: Examiner's Response to the Argument and Comments



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Upon review, the Examiner agrees with the arguments of the Third Party Requester and adopts this suggested rejection. See "Ground 1: Examiner's Response to the Argument and Comments," *supra*.

**Proposed third party requester rejection: Ground #23**

As an alternative to Ground #21, the requester submits on pages 47 and 48 of the request that claim 4 is unpatentable under 35 U.S.C. § 103(a) as being obvious over Nesbitt, U.S. Pat. No. 4,431,193, in view of Molitor et al., U.S. Pat. No. 4,274,637, (Molitor '637).

Claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt in view of Molitor '637.

The below claim chart identifies the new limitations introduced by dependent claim 4.

Claim 4	Nesbitt
wherein said inner cover layer has a thickness of about 0.050 inches, and	"It is found that the inner layer of hard, high flexural modulus resinous material such as SURLYN resin type 1605, is preferably of a thickness in a range of 0.020 inches and 0.070 inches." (Nesbitt, col. 3, ll. 19-23).
said outer cover layer has a thickness of about 0.055 inches,	"The thickness of the outer layer or cover 16 of soft, low flexural modulus resin such as SURLYN type 1855, may be in the range of 0.020 inches and 0.100 inches." (Nesbitt, col. 3, ll. 22-25).
said golf ball having an overall diameter of 1.680 inches or more.	"According to the United States Golf Association Rules, the minimum diameter prescribed for a golf ball is 1.680 inches...." (Nesbitt, col. 2: ll. 50-52.) "This center or core 12 and inner layer 14 of hard resinous material in the form of a sphere is then remolded into a dimpled golf ball of a diameter of 1.680 inches minimum with an outer or cover layer 16 of a soft, low flexural modulus resin ...." (Nesbitt, col. 3, ll. 34-38.)

Thus, because all new limitations of claim 4 are found within Nesbitt and from the above analysis within Ground #16 claim 3 is obvious by Nesbitt in view of Molitor '637, claim 4 is likewise obvious by Nesbitt in view of Molitor '637.

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This rejection of claim 4 based on Nesbitt in view of Molitor '637 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

#### Ground 23: Patent Owner's Argument

Patent Owner argues that the minimum thickness for the outer layer of the cover of Molitor '637 is 0.060 inches while this claim requires a thickness of 0.055 for this layer (Patent Owner's Response at middle of page 17).

#### Ground 23: Third Party Requester's Comments

Third Party Requester counter argues that Nesbitt discloses a range of 0.020 to 0.100 inches for the thickness of the outer cover of a golf ball (Nesbitt at col. 3, lines 22-25). The holding in *KRS* would dictate that one of ordinary skill would know to use the material of Molitor '637, polyurethane, with the thickness of Nesbitt (Third Party Requester's Comments at middle of page 21).

#### Ground 23: Examiner's Response to the Argument and Comments

Examiner agrees with the comments of the Third Party Requester, and the rejection of claim 4 under 35 USC 103(a) as being obvious by Nesbitt in view of Molitor '637 is maintained. Since Nesbitt references the Molitor '637 patent, one of ordinary skill would logically look at its complete disclosure which includes the use of polyurethane as an outer cover. Using the thickness values of Nesbitt with polyurethane would be obvious because Nesbitt states that "the

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thickness of the inner layer . . . and the thickness of outer layer . . . may be varied to secure the advantages herein mentioned" at col. 3, lines 16-19. The advantages Nesbitt wishes to achieve are both distance and feel in one golf ball (Nesbitt at col. 2, lines 1-9).

#### **Proposed third party requester rejection: Ground #24**

As an alternative to Ground #21, the requester submits on pages 47 and 48 of the request that claim 4 is unpatentable under 35 U.S.C. § 103(a) as being obvious over Nesbitt, U.S. Pat. No. 4,431,193, in view of Wu, U.S. Pat. No. 5,334,673.

Claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt in view of Wu.

The below claim chart identifies the new limitations introduced by dependent claim 4.

Claim 4	Nesbitt
wherein said inner cover layer has a thickness of about 0.050 inches, and	"It is found that the inner layer of hard, high flexural modulus resinous material such as SURLYN resin type 1605, is preferably of a thickness in a range of 0.020 inches and 0.070 inches." (Nesbitt, col. 3, ll. 19-23).
said outer cover layer has a thickness of about 0.055 inches,	"The thickness of the outer layer or cover 16 of soft, low flexural modulus resin such as SURLYN type 1855, may be in the range of 0.020 inches and 0.100 inches." (Nesbitt, col. 3, ll. 22-25).
said golf ball having an overall diameter of 1.680 inches or more.	"According to the United States Golf Association Rules, the minimum diameter prescribed for a golf ball is 1.680 inches...." (Nesbitt, col. 2: ll. 50-52.) "This center or core 12 and inner layer 14 of hard resinous material in the form of a sphere is then remolded into a dimpled golf ball of a diameter of 1.680 inches minimum with an outer or cover layer 16 of a soft, low flexural modulus resin ...." (Nesbitt, col. 3, ll. 34-38.)

Thus, because all new limitations of claim 4 are found within Nesbitt and from the above analysis within Ground #17 claim 3 is obvious by Nesbitt in view of Wu, claim 4 is likewise obvious by Nesbitt in view of Wu.

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This rejection of claim 4 based on Nesbitt in view of Wu was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

#### Ground 24: Patent Owner's Argument

Patent Owner does not specifically argue this rejection.

#### Ground 24: Third Party Requester's Comments

Third Party Requester does not specifically counter argue this rejection.

#### Ground 24: Examiner's Response to the Argument and Comments

Examiner agrees with the general comments of the Third Party Requester, and the rejection of claim 4 under 35 USC 103(a) as being obvious by Nesbitt in view of Wu is maintained. See "Ground 3: Examiner's Response to the Argument and Comments," *supra*.

#### **Proposed third party requester rejection: Ground #25**

As an alternative to Ground #21, the requester submits on pages 47 and 48 of the request that claim 4 is unpatentable under 35 U.S.C. § 103(a) as being obvious over Nesbitt, U.S. Pat. No. 4,431,193, in view of Molitor et al., U.S. Pat. No. 4,674,751.

Claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt in view of Molitor '751.

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The below claim chart identifies the new limitations introduced by dependent claim 4.

Claim 4	Nesbitt
wherein said inner cover layer has a thickness of about 0.050 inches, and	"It is found that the inner layer of hard, high flexural modulus resinous material such as SURLYN resin type 1605, is preferably of a thickness in a range of 0.020 inches and 0.070 inches." (Nesbitt, col. 3, ll. 19-23).
said outer cover layer has a thickness of about 0.055 inches,	"The thickness of the outer layer or cover 16 of soft, low flexural modulus resin such as SURLYN type 1855, may be in the range of 0.020 inches and 0.100 inches." (Nesbitt, col. 3, ll. 22-25).
said golf ball having an overall diameter of 1.680 inches or more.	"According to the United States Golf Association Rules, the minimum diameter prescribed for a golf ball is 1.680 inches...." (Nesbitt, col. 2: ll. 50-52.) "This center or core 12 and inner layer 14 of hard resinous material in the form of a sphere is then remolded into a dimpled golf ball of a diameter of 1.680 inches minimum with an outer or cover layer 16 of a soft, low flexural modulus resin ...." (Nesbitt, col. 3, ll. 34-38.)

Thus, because all new limitations of claim 4 are found within Nesbitt and from the above analysis within Ground #18 claim 3 is obvious by Nesbitt in view of Molitor '751, claim 4 is likewise obvious by Nesbitt in view of Molitor '751.

This rejection of claim 4 based on Nesbitt in view of Molitor '751 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

#### Ground 25: Patent Owner's Argument

Patent Owner does not specifically argue this rejection.

#### Ground 25: Third Party Requester's Comments

Third Party Requester does not specifically counter argue this rejection.

#### Ground 25: Examiner's Response to the Argument and Comments

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Examiner agrees with the general comments of the Third Party Requester, and the rejection of claim 4 under 35 USC 103(a) as being obvious by Nesbitt in view of Molitor '751 is maintained. See "Ground 4: Examiner's Response to the Argument and Comments," *supra*.

**Proposed third party requester rejection: Ground #26**

The requester submits on pages 48 and 49 of the request that claim 4 is unpatentable under 35 U.S.C. § 103(a) as being obvious over Proudfit, U.S. Pat. No. 5,314,187, (Proudfit) in view of Molitor et al., U.S. Pat. No. 4,274,637.

**This rejection is not adopted.**

Proudfit's preferred embodiment's inner layer is 0.037 inches thick, see col. 7:43-44. Claim 4 requires the inner layer to be about 0.050 inches thick. Those skilled in the art measure thickness to the thousandths of an inch. The difference between the Proudfit preferred embodiment and the claimed invention is 0.013 inches or thirteen hundredths of an inch. This difference equates to a difference of a factor of ten. Further, the requester admits that it is not the chemical but the mechanical properties of the materials used in making golf balls important to those skilled in the art. One of the mechanical properties in constructing a golf ball with materials is the thickness to make a given layer. Therefore, for these reasons this proposed rejection is not adopted.

**Ground 26: Patent Owner's Argument**

Patent Owner does not specifically argue this rejection.

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Ground 26: Third Party Requester's Comments

Third Party Requester does not specifically counter argue this rejection.

Ground 26: Examiner's Response to the Argument and Comments

For the reasons stated in the above explanation, the non-adoption of this rejection is maintained.

**Proposed third party requester rejection: Ground #27**

The requester submits on pages 48 and 49 of the request that claim 4 is unpatentable under 35 U.S.C. § 103(a) as being obvious over Proudfit, U.S. Pat. No. 5,314,187, (Proudfit) in view of Wu, U.S. Pat. No. 5,334,673, (Wu).

**This rejection is not adopted.**

Proudfit's preferred embodiment's inner layer is 0.037 inches thick, see col. 7:43-44. Claim 4 requires the inner layer to be about 0.050 inches thick. Those skilled in the art measure thickness to the thousandths of an inch. The difference between the Proudfit preferred embodiment and the claimed invention is 0.013 inches or thirteen hundredths of an inch. This difference equates to a difference of a factor of ten. Further, the requester admits that it is not the chemical but the mechanical properties of the materials used in making golf balls important to those skilled in the art. One of the mechanical properties in constructing a golf ball with materials is the thickness to make a given layer. Therefore, for these reasons this proposed rejection is not adopted.

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Ground 27: Patent Owner's Argument

Patent Owner does not specifically argue this rejection.

Ground 27: Third Party Requester's Comments

Third Party Requester does not specifically counter argue this rejection.

Ground 27: Examiner's Response to the Argument and Comments

For the reasons stated in the above explanation, the non-adoption of this rejection is maintained.

**Proposed third party requester rejection: Ground #28**

The requester submits on pages 48 and 49 that claim 4 is unpatentable under 35 U.S.C. § 103(a) as being obvious over Proudfit, U.S. Pat. No. 5,314,187, (Proudfit) in view of Molitor et al., U.S. Pat. No. 4,674,751, (Molitor '751).

**This rejection is not adopted.**

Proudfit's preferred embodiment's inner layer is 0.037 inches thick, see col. 7:43-44. Claim 4 requires the inner layer to be about 0.050 inches thick. Those skilled in the art measure thickness to the thousandths of an inch. The difference between the Proudfit preferred embodiment and the claimed invention is 0.013 inches or thirteen hundredths of an inch. This difference equates to a difference of a factor of ten. Further, the requester admits that it is not the chemical but the mechanical properties of the materials used in making golf balls important to



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those skilled in the art. One of the mechanical properties in constructing a golf ball with materials is the thickness to make a given layer. Therefore, for these reasons this proposed rejection is not adopted.

#### Ground 28: Patent Owner's Argument

Patent Owner does not specifically argue this rejection.

#### Ground 28: Third Party Requester's Comments

Third Party Requester does not specifically counter argue this rejection.

#### Ground 28: Examiner's Response to the Argument and Comments

For the reasons stated in the above explanation, the non-adoption of this rejection is maintained.

#### Re. Claim 5

#### **Proposed third party requester rejection: Ground #29**

The requester submits on pages 50 through 54 that claim 5 is unpatentable under 35 U.S.C. § 102(b) as being anticipated by Nesbitt, U.S. Pat. No. 4,431,193.

In the request on pages 50 through 54 the third party requester proposes that claim 5 be rejected based upon Nesbitt alone with the incorporation by reference of Molitor '637. The third party requester points out that Molitor '637 is incorporated by reference into Nesbitt because Nesbitt refers to Molitor '637. (See Nesbitt col. 3, ll. 54-60).

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**This rejection is adopted in this office action.**

Claim 5 is rejected under 35 U.S.C. 102(b) as anticipated by Nesbitt.

Below is a claim chart identifying the claim limitations and which reference Nesbitt or Molitor '637 discloses, teaches or suggests the claim limitations.

Claim 5	Nesbitt (primary) with Molitor '637 (incorporation by reference)
A multi-layer golf ball comprising:	"The disclose embraces a golf ball and method of making same...." (Nesbitt, Abstract; FIGS 1 & 2)
a spherical core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or core formed as a solid body of resilient polymeric material or rubber-like material in the shape of a sphere." (Nesbitt, col. 2, ll. 31-34).
an inner cover layer disposed over said spherical core to form a spherical intermediate ball,	"Disposed on the spherical center or core 12 is a <b>first layer, lamination, ply or inner cover 14</b> of molded hard, highly flexural modulus resinous material...." (Nesbitt, col. 2, ll. 34-37).
said inner cover having Shore D hardness of at least 60,	"[I]nner cover 14 of molded hard, highly flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. DuPont de Nemours." (Nesbitt, col. 2, ll. 36-38). "[A] center or core 12 ... is molded with a layer of hard, high modulus SURLYN resin, such as SURLYN type 1605..." (Nesbitt, col. 3, ll. 27-29). See below with respect to the Shore D limitation
said inner cover layer comprising an ionomeric resin having no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid and	"Reference is made to the application Ser. No. 155,658, of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for one or both layers 14 [inner] and 16 [outer] for the golf ball of this invention." (Nesbitt, col. 3, ll. 56-61). <b>Molitor '637:</b> Molitor teaches, in examples 1-7, cover materials including a blend of two ionomer resins: SURLYN 1605 and SURLYN 1557. (Molitor '637, col. 14, l. 22 to col. 16, l. 34). See below with respect to % by weight limitation.
having a modulus of from about 15,000 to about 70,000 psi,	see below
and said inner cover layer having a thickness from about 0.100 to about 0.010 inches; and	"It is found that the inner layer of hard, high flexural modulus resinous material such as SURLYN resin type 1605, is preferably of a thickness in a range of 0.020 inches and 0.070 inches." (Nesbitt, col. 3, ll. 19-23.)
a dimpled outer cover layer disposed over said spherical intermediate ball to form a multi-layer golf ball,	"An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material ... is then re-molded onto the inner ply or layer 14 ...." (Nesbitt, col. 2, ll. 43-47.) "[T]he outer layer or cover 16 being of dimpled configuration...." (Nesbitt, col. 2, lines 48-49 and Figure 2.)
said outer cover having a Shore D hardness of about 64 or less,	<b>Nesbitt:</b> "Reference is made to the application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which

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	<p>may be employed for ... layers ... 16 for the golf ball of this invention.” (Nesbitt, col. 3, ll. 54-60).</p> <p><b>Molitor ‘637:</b> Teaches the use of ESTANE 58133 in Examples 16 and 17. (Molitor ‘637, col. 18, ll. 32-60) See below why this cover material has inherently a Shore D hardness of 55.</p>
said outer cover layer comprising a polyurethane,	<p><b>Nesbitt:</b> “Reference is made to the application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention.” (Nesbitt, col. 3, ll. 54-60).</p> <p><b>Molitor ‘637:</b> See TABLE 10 which teaches ESTANE 58133 is a thermoplastic polyurethane, thus is a polyurethane based material. Moreover, Molitor ‘637 teaches the cover materials include “polyurethanes such as are prepared from polyols and organic polyisocyanates”. (Molitor ‘637, col. 5, ll. 39-41; col. 18, ll. 32-60 (Examples 16 and 18)).</p>
said outer cover layer having a modulus in a range of about 1,000 to about 30,000 psi, and	<p><b>Exhibit J:</b> Estane 58133 Product Information Sheet: Estane 58133 has a modulus of 25,000 psi.</p>
said outer cover layer having a thickness of from about 0.010 to about 0.070 inches.	<p>“The thickness of the outer layer or cover 16 of soft, low flexural modulus resin such as SURLYN type 1855, may be in the range of 0.020 inches and 0.100 inches.” (Nesbitt, col. 3, ll. 22-25).</p>

As mentioned above, Nesbitt incorporates by reference Molitor ‘637 as describing an number of compositions suitable for the inner cover layer 14. Of particular interest in this case are Examples 1-7 within Molitor ‘637. Examples 1-7 use a ratio of SURLYN 1605 and SURLYN 1557. The use of SURLYN grades for golf ball covers is also disclosed in U.S. Pat. No. 4,690,981. The preferred composition in the ‘981 Patent has “from about 5[%] to about 15% by weight of unsaturated carboxylic acid.” ‘981 Pat., col. 3, ll. 59-60. Those of ordinary skill in the art understand that SURLYN 1605 has been “redesignated” as SURLYN 8940 and SURLYN 1557 has been “redesignated” as SURLYN 9650, see e.g. U.S. Pat. No. 4,679,795, col. 6, ll. 10-15 and U.S. Pat. No. 5,150,906, col. 4, ll. 66. Furthermore, the Patent Owner in the Sullivan ‘873 Patent admitted that SURLYN 1605 is now designated as 8940 and was used in Nesbitt’s first (inner) layer and is a sodium ion based low acid “(less than or equal to 15 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 51,000 psi.” See ‘873

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Patent, col. 2, ll. 43-50. Moreover, as shown in the “Properties Grid for Selected Industrial Grades of SURLYN” SURLYN 9650’s ordinate compared to the other grades of SURLYN is toward the “Low % Acid” side of the graph. Thus, based on this evidence, Nesbitt referencing Molitor ‘637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid. Moreover, as stated above, it has been identified that one resin in Nesbitt has a flexural modulus of 51,000 psi. This teaching of flexural modulus falls within the range claimed (15,000 psi to 70,000 psi).

Exhibit J is a product information sheet for Estane 58133 a material that is taught to be used as an outer layer. Exhibit J teaches that Estane 58133 has a flexural modulus of 25,000 psi.

This rejection of claim 5 based on Nesbitt incorporating by reference Molitor ‘637 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

#### Ground 29: Patent Owner’s Argument

Patent Owner does not argue this rejection.

#### Ground 29: Third Party Requester’s Comments

Third Party Requester’s arguments for this claim are the same as given *supra* at “Ground 1: Third Party Requester’s Comments.”

#### Ground 29: Examiner’s Response to the Argument and Comments

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Upon review, the Examiner agrees with the arguments of the Third Party Requester and adopts this suggested rejection. See "Ground 1: Examiner's Response to the Argument and Comments," *supra*.

### Proposed third party requester rejection: Ground #30

The requester submits on pages 50 through 54 that claim 5 is unpatentable under 35 U.S.C. § 103(a) as being obvious over Nesbitt, U.S. Pat. No. 4,431,193, in view of Molitor et al., U.S. Pat. No. 4,274,637, (Molitor '637).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nesbitt in view of Molitor '637, as evidenced by Exhibit J.

Below is a claim chart identifying the claim limitations and which reference Nesbitt or Molitor '637 discloses, teaches or suggests the claim limitations.

Claim 5	Nesbitt (primary) with Molitor '637 (teaching)
A multi-layer golf ball comprising:	"The disclose embraces a golf ball and method of making same...." (Nesbitt, Abstract; FIGS 1 & 2)
a spherical core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or <b>core</b> formed as a solid body of resilient polymeric material or rubber-like material in the shape of a <b>sphere</b> ." (Nesbitt, col. 2, ll. 31-34).
an inner cover layer disposed over said spherical core to form a spherical intermediate ball,	"Disposed on the spherical center or core 12 is a <b>first layer, lamination, ply or inner cover 14</b> of molded hard, highly flexural modulus resinous material...." (Nesbitt, col. 2, ll. 34-37).
said inner cover having Shore D hardness of at least 60,	"[I]nner cover 14 of molded hard, highly flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. DuPont de Nemours." (Nesbitt, col. 2, ll. 36-38). "[A] center or core 12 ... is molded with a layer of hard, high modulus SURLYN resin, such as SURLYN type 1605..." (Nesbitt, col. 3, ll. 27-29). See below with respect to the Shore D limitation
said inner cover layer comprising an ionomeric resin having no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid and	"Reference is made to the application Ser. No. 155,658, of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for one or both layers 14 [inner] and 16 [outer] for the golf

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	ball of this invention.” (Nesbitt, col. 3, ll. 56-61). <b>Molitor ‘637</b> : Molitor teaches, in examples 1-7, cover materials including a blend of two ionomer resins: SURLYN 1605 and SURLYN 1557. (Molitor ‘637, col. 14, l. 22 to col. 16, l. 34). See below with respect to % by weight limitation.
having a modulus of from about 15,000 to about 70,000 psi,	see below
and said inner cover layer having a thickness from about 0.100 to about 0.010 inches; and	“It is found that the inner layer of hard, high flexural modulus resinous material such as SURLYN resin type 1605, is preferably of a thickness in a range of 0.020 inches and 0.070 inches.” (Nesbitt, col. 3, ll. 19-23.)
a dimpled outer cover layer disposed over said spherical intermediate ball to form a multi-layer golf ball,	“An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material ... is then re-molded onto the inner ply or layer 14 ....” (Nesbitt, col. 2, ll. 43-47.) “[T]he outer layer or cover 16 being of dimpled configuration....” (Nesbitt, col. 2, lines 48-49 and Figure 2.)
said outer cover having a Shore D hardness of about 64 or less,	<b>Nesbitt</b> : “Reference is made to the application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention.” (Nesbitt, col. 3, ll. 54-60). <b>Molitor ‘637</b> : Teaches the use of ESTANE 58133 in Examples 16 and 17. (Molitor ‘637, col. 18, ll. 32-60) See below why this cover material has inherently a Shore D hardness of 55.
said outer cover layer comprising a polyurethane,	<b>Nesbitt</b> : “Reference is made to the application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention.” (Nesbitt, col. 3, ll. 54-60). <b>Molitor ‘637</b> : See TABLE 10 which teaches ESTANE 58133 is a thermoplastic polyurethane, thus is a polyurethane based material. Moreover, Molitor ‘637 teaches the cover materials include “polyurethanes such as are prepared from polyols and organic polyisocyanates”. (Molitor ‘637, col. 5, ll. 39-41; col. 18, ll. 32-60 (Examples 16 and 18)).
said outer cover layer having a modulus in a range of about 1,000 to about 30,000 psi, and	<b>Exhibit J</b> : Estane 58133 Product Information Sheet: Estane 58133 has a modulus of 25,000 psi.
said outer cover layer having a thickness of from about 0.010 to about 0.070 inches.	“The thickness of the outer layer or cover 16 of soft, low flexural modulus resin such as SURLYN type 1855, may be in the range of 0.020 inches and 0.100 inches.” (Nesbitt, col. 3, ll. 22-25).

As mentioned above, Nesbitt references Molitor ‘637 as describing an number of compositions suitable for the inner cover layer 14. Of particular interest in this case are Examples 1-7 within Molitor ‘637. Examples 1-7 use a ratio of SURLYN 1605 and SURLYN 1557. The use of SURLYN grades for golf ball covers is also disclosed in U.S. Pat. No.

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4,690,981. The preferred composition in the '981 Patent has "from about 5[%] to about 15% by weight of unsaturated carboxylic acid." '981 Pat., col. 3, ll. 59-60. Those of ordinary skill in the art understand that SURLYN 1605 has been "redesignated" as SURLYN 8940 and SURLYN 1557 has been "redesignated" as SURLYN 9650, see e.g. U.S. Pat. No. 4,679,795, col. 6, ll. 10-15 and U.S. Pat. No. 5,150,906, col. 4, ll. 66. Furthermore, the Patent Owner in the Sullivan '873 Patent admitted that SURLYN 1605 is now designated as 8940 and was used in Nesbitt's first (inner) layer and is a sodium ion based low acid "(less than or equal to 15 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 51,000 psi." See '873 Patent, col. 2, ll. 43-50. Moreover, as shown in the "Properties Grid for Selected Industrial Grades of SURLYN" SURLYN 9650's ordinate compared to the other grades of SURLYN is toward the "Low % Acid" side of the graph. Thus, based on this evidence, Nesbitt referencing Molitor '637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid. Moreover, as stated above, it has been identified that one resin in Nesbitt has a flexural modulus of 51,000 psi. This teaching of flexural modulus falls within the range claimed (15,000 psi to 70,000 psi).

Exhibit J is a product information sheet for Estane 58133 a material that is taught to be used as an outer layer. Exhibit J teaches that Estane 58133 has a flexural modulus of 25,000 psi.

This rejection of claim 5 based on Nesbitt in view of Molitor '637 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Ground 30: Patent Owner's Argument

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Patent Owner does not specifically argue this rejection. The arguments are the same as those at "Ground 2: Patent Owner's Argument," *supra*.

#### Ground 30: Third Party Requester's Comments

Third Party Requester does not specifically counter argue this rejection. The counter arguments are the same as those at "Ground 2: Third Party Requester's Comments," *supra*.

#### Ground 30: Examiner's Response to the Argument and Comments

Examiner agrees with the general comments of the Third Party Requester, and the rejection of claim 3 under 35 USC 103(a) as being obvious by Nesbitt in view of Molitor '637 is maintained. See "Ground 2: Examiner's Response to the Argument and Comments," *supra*.

#### **Proposed third party requester rejection: Ground #31**

The requester submits on pages 54 through 56 that claim 5 under 35 U.S.C. § 103(a) as being obvious over Nesbitt, U.S. Pat. No. 4,431,193, (Nesbitt) in view of Wu, U.S. Patent No. 5,334,673, (Wu).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nesbitt mentioning Molitor '637 in view of Wu, as evidenced by Exhibit C and Decl. of Dalton at para. 7.

Below is a claim chart identifying the claim limitations and which reference Nesbitt or Wu discloses, teaches or suggests the claim limitations. As reported in the Order granting reexamination, it needs to be correctly stated on the record that Nesbitt and Molitor '637 which



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is mentioned in Nesbitt teach the use of particular polyurethane materials for the use as an outer layer.

Claim 5	Nesbitt (primary) mentioning Molitor '637 with Wu (teaching)
A multi-layer golf ball comprising:	"The disclose embraces a golf ball and method of making same...." (Nesbitt, Abstract; FIGS 1 & 2)
a spherical core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or <b>core</b> formed as a solid body of resilient polymeric material or rubber-like material in the shape of a <b>sphere</b> ." (Nesbitt, col. 2, ll. 31-34).
an inner cover layer disposed over said spherical core to form a spherical intermediate ball,	"Disposed on the spherical center or core 12 is a <b>first layer, lamination, ply or inner cover 14</b> of molded hard, highly flexural modulus resinous material...." (Nesbitt, col. 2, ll. 34-37).
said inner cover having Shore D hardness of at least 60,	"[I]nner cover 14 of molded hard, highly flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. DuPont de Nemours." (Nesbitt, col. 2, ll. 36-38). "[A] center or core 12 ... is molded with a layer of hard, high modulus SURLYN resin, such as SURLYN type 1605..." (Nesbitt, col. 3, ll. 27-29). See below with respect to the Shore D limitation.
said inner cover layer comprising an ionomeric resin having no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid and	"Reference is made to the application Ser. No. 155,658, of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for one or both layers 14 [inner] and 16 [outer] for the golf ball of this invention." (Nesbitt, col. 3, ll. 56-61). <b>Molitor '637</b> : Molitor teaches, in examples 1-7, cover materials including a blend of two ionomer resins: SURLYN 1605 and SURLYN 1557. (Molitor '637, col. 14, l. 22 to col. 16, l. 34). See below with respect to the % by weight limitation.
having a modulus of from about 15,000 to about 70,000 psi,	see below
and said inner cover layer having a thickness from about 0.100 to about 0.010 inches; and	"It is found that the inner layer of hard, high flexural modulus resinous material such as SURLYN resin type 1605, is preferably of a thickness in a range of 0.020 inches and 0.070 inches." (Nesbitt, col. 3, ll. 19-23.)
a dimpled outer cover layer disposed over said spherical intermediate ball to form a multi-layer golf ball,	"An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material ... is then re-molded onto the inner ply or layer 14 ...." (Nesbitt, col. 2, ll. 43-47). "[T]he outer layer or cover 16 being of dimpled configuration...." (Nesbitt, col. 2, lines 48-49 and Figure 2.)
said outer cover having a Shore D hardness of about 64 or less,	<b>Nesbitt</b> : "Reference is made to the application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60). <b>Molitor '637</b> : Teaches the use of ESTANE 58133 in Examples 16 and 17. (Molitor '637, col. 18, ll. 32-60) See below why this cover material has inherently a Shore D hardness of 55.

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said outer cover layer comprising a polyurethane,	<b>Molitor '637:</b> See TABLE 10 which teaches ESTANE 58133 is a thermoplastic polyurethane, thus is a polyurethane based material. Moreover, Molitor '637 teaches the cover materials include "polyurethanes such as are prepared from polyols and organic polyisocyanates". (Molitor '637, col. 5, ll. 39-41; col. 18, ll. 32-60 (Examples 16 and 18)). <b>Wu:</b> "With polyurethanes made in accordance with the present invention, the degree of cure which has taken place is dependent upon, inter alia, the time, temperature, type of curative, and amount of catalyst used. It has been found that the degree of cure of the cover composition is directly proportional to the hardness of the composition. A hardness about 10D to 30D, Shore D hardness for the cover stock at the end of the intermediate curing step (i.e. just prior to the final molding step) has been found to be suitable for the present invention. More preferred is a hardness of about 12D to 20D." (Wu, col. 6, ll. 27-38).
said outer cover layer having a modulus in a range of about 1,000 to about 30,000 psi, and	see below
said outer cover layer having a thickness of from about 0.010 to about 0.070 inches.	"The thickness of the outer layer or cover 16 of soft, low flexural modulus resin such as SURLYN type 1855, may be in the range of 0.020 inches and 0.100 inches." (Nesbitt, col. 3, ll. 22-25).

As mentioned above, Nesbitt references Molitor '637 as describing an number of compositions suitable for the inner cover layer 14. Of particular interest in this case are Examples 1-7 within Molitor '637. Examples 1-7 use a ratio of SURLYN 1605 and SURLYN 1557. The use of SURLYN grades for golf ball covers is also disclosed in U.S. Pat. No. 4,690,981. The preferred composition in the '981 Patent has "from about 5[%] to about 15% by weight of unsaturated carboxylic acid." '981 Pat., col. 3, ll. 59-60. Those of ordinary skill in the art understand that SURLYN 1605 has been "redesignated" as SURLYN 8940 and SURLYN 1557 has been "redesignated" as SURLYN 9650, see e.g. U.S. Pat. No. 4,679,795, col. 6, ll. 10-15 and U.S. Pat. No. 5,150,906, col. 4, ll. 66. Furthermore, the Patent Owner in the Sullivan '873 Patent admitted that SURLYN 1605 is now designated as 8940 and was used in Nesbitt's first (inner) layer and is a sodium ion based low acid "(less than or equal to 15 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 51,000 psi." See '873

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Patent, col. 2, ll. 43-50. Moreover, as shown in the “Properties Grid for Selected Industrial Grades of SURLYN” SURLYN 9650’s ordinate compared to the other grades of SURLYN is toward the “Low % Acid” side of the graph. Thus, based on this evidence, Nesbitt referencing Molitor ‘637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid. Moreover, as stated above, it has been identified that one resin in Nesbitt has a flexural modulus of 51,000 psi. This teaching of flexural modulus falls within the range claimed (15,000 psi to 70,000 psi).

As mentioned above, Nesbitt mentioning Molitor ‘637 teaches the use of particular polyurethane materials for the use as an outer layer. Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that SURLYN covered golf balls lack the “click” and “feel” of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar “click” and “feel” of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. This teaching of Shore D hardness is directed to an intermediate curing step product prior to the final molding process to finish the golf ball. Exhibit C demonstrates the actual finished golf ball product having the cover layer that Wu teaches within its disclosure. Exhibit C teaches that the golf ball taught therein is covered by the following patents: 4,783,078; 4,846,910; 4,858,923; 4,904,320; 4,915,390; 5,007,594; 5,080,367; 5,133,509; **5,334,673**; and D339,074. The ‘673 Patent teaches the cover sock of the Exhibit C finished golf ball. Exhibit C teaches that the golf ball taught therein has a cover material made from an “elastomer”, having a thickness of .050”,

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and 58 Shore D hardness. All three properties are within the range of mechanical properties of the claim invention (polyurethane is an elastomer, cover layer thickness ranges from 0.010 to 0.070 inches and the Shore D hardness is less than 64). Claim 5 also claims the flexural modulus of the material be within the range of 1,000 psi to 30,000 psi. The Declaration of Dalton declares that Example 1 in Wu is about 23,000 psi. Because it has been admitted by the inventor of the Sullivan '893 patent that the particular chemical properties of the materials (the chemical composition) used in the construction of a golf ball lack criticality as compared to the mechanical properties (the Shore D hardness, flexural modulus, layer thickness) of those compounds used for constructing the different layers (Exhibit G at 334), one of ordinary skill in the art at the time the invention was made would find it obvious to incorporate the teachings of Wu which inherently include the teachings of Shore hardness for the fully cured cover layer as taught in Exhibit C as obvious equivalent materials in order to achieve the same end result of providing a cover layer that has the same "click" and "feel" of a balata cover which the extra durability of an elastomeric material.

This rejection of claim 5 based on Nesbitt mentioning Molitor '637 in view of Wu as evidenced by Exhibit C and Decl. of Dalton, para. 7 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

#### Ground 31: Patent Owner's Argument

Patent Owner does not specifically argue this rejection, except that the Dalton Declaration is not competent evidence to disclose Wu's cover's flex modulus because of

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Dalton's employment with the Requester (Patent Owner's Argument at middle of page 21). The other arguments are the same as those at "Ground 3: Patent Owner's Argument," *supra*.

#### Ground 31: Third Party Requester's Comments

Third Party Requester does not specifically counter argue this rejection. The counter arguments are the same as those at "Ground 3: Third Party Requester's Comments," *supra*.

#### Ground 31: Examiner's Response to the Argument and Comments

Examiner agrees with the general comments of the Third Party Requester, and the rejection of claim 5 under 35 USC 103(a) as being obvious by Nesbitt in view of Wu is maintained. See "Ground 3: Examiner's Response to the Argument and Comments," *supra*. As to the Patent Owner's argument on the use of Dalton Declaration, the Examiner accepts the declaration as competent evidence because it is a sworn declaration. As such, the Examiner will not probe into the Declarant's veracity.

#### **Proposed third party requester rejection: Ground #32**

The requester submits on pages 56 through 58 that claim 5 under 35 U.S.C. § 103(a) as being obvious over Nesbitt, U.S. Pat. No. 4,431,193, in view of Molitor et al., U.S. Pat. No. 4,674,751, (Molitor '751).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nesbitt mentioning Molitor '637 in view of Molitor '751, as evidenced by Exhibit J.

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Below is a claim chart identifying the claim limitations and where Nesbitt discloses, teaches or suggests the claim limitations. As reported in the Order granting reexamination, it needs to be correctly stated on the record that Nesbitt and Molitor '637 which is mentioned in Nesbitt teach the use of particular polyurethane materials for the use as an outer layer .

Claim 5	Nesbitt (primary) mentioning Molitor '637 with Molitor '751 (teaching)
A multi-layer golf ball comprising:	"The disclose embraces a golf ball and method of making same...." (Nesbitt, Abstract; FIGS 1 & 2)
a spherical core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or core formed as a solid body of resilient polymeric material or rubber-like material in the shape of a sphere." (Nesbitt, col. 2, ll. 31-34).
an inner cover layer disposed over said spherical core to form a spherical intermediate ball,	"Disposed on the spherical center or core 12 is a first layer, lamination, ply or inner cover 14 of molded hard, highly flexural modulus resinous material...." (Nesbitt, col. 2, ll. 34-37). See below with respect to the Shore D limitation.
said inner cover having Shore D hardness of at least 60,	"[I]nner cover 14 of molded hard, highly flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. DuPont de Nemours." (Nesbitt, col. 2, ll. 36-38). "[A] center or core 12 ... is molded with a layer of hard, high modulus SURLYN resin, such as SURLYN type 1605..." (Nesbitt, col. 3, ll. 27-29). See below with respect to % by weight limitation.
said inner cover layer comprising an ionomeric resin having no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid and	"Reference is made to the application Ser. No. 155,658, of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for one or both layers 14 [inner] and 16 [outer] for the golf ball of this invention." (Nesbitt, col. 3, ll. 56-61). <b>Molitor '637:</b> Molitor teaches, in examples 1-7, cover materials including a blend of two ionomer resins: SURLYN 1605 and SURLYN 1557. (Molitor '637, col. 14, l. 22 to col. 16, l. 34).
having a modulus of from about 15,000 to about 70,000 psi,	see below
and said inner cover layer having a thickness from about 0.100 to about 0.010 inches; and	"It is found that the inner layer of hard, high flexural modulus resinous material such as SURLYN resin type 1605, is preferably of a thickness in a range of 0.020 inches and 0.070 inches." (Nesbitt, col. 3, ll. 19-23.)
a dimpled outer cover layer disposed over said spherical intermediate ball to form a multi-layer golf ball,	"An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material ... is then re-molded onto the inner ply or layer 14 ...." (Nesbitt, col. 2, ll. 43-47). "[T]he outer layer or cover 16 being of dimpled configuration...." (Nesbitt, col. 2, lines 48-49 and Figure 2.)
said outer cover having a Shore D hardness of about 64 or less,	<b>Nesbitt:</b> "Reference is made to the application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this

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	invention.” (Nesbitt, col. 3, ll. 54-60). <b>Molitor ‘637</b> : Teaches the use of ESTANE 58133 in Examples 16 and 17. (Molitor ‘637, col. 18, ll. 32-60) See below why this cover material has inherently a Shore D hardness of 55.
said outer cover layer comprising a polyurethane,	<b>Nesbitt</b> : “Reference is made to the application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention.” (Nesbitt, col. 3, ll. 54-60). <b>Molitor ‘637</b> : See TABLE 10 which teaches ESTANE 58133 is a thermoplastic polyurethane, thus is a polyurethane based material. Moreover, Molitor ‘637 teaches the cover materials include “polyurethanes such as are prepared from polyols and organic polyisocyanates”. (Molitor ‘637, col. 5, ll. 39-41; col. 18, ll. 32-60 (Examples 16 and 18)).
said outer cover layer having a modulus in a range of about 1,000 to about 30,000 psi, and	<b>Exhibit J</b> : Estane 58133 Product Information Sheet: Estane 58133 has a modulus of 25,000 psi.
said outer cover layer having a thickness of from about 0.010 to about 0.070 inches.	“The thickness of the outer layer or cover 16 of soft, low flexural modulus resin such as SURLYN type 1855, may be in the range of 0.020 inches and 0.100 inches.” (Nesbitt, col. 3, ll. 22-25).

As shown above in the claim chart, Nesbitt mentioning Molitor ‘637 suggests the use of a soft outer cover layer including a polyurethane material. In an analogous golf ball, Molitor ‘751 teaches that:

It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core a cover having a shore C hardness less than 85, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a thermoplastic urethane having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55.

(Molitor ‘751, col. 2, ll.33-49 (emphasis added)).

Moreover, in explaining what constitutes a two-piece golf ball, Molitor ‘751 teaches that:

The phrase “two piece ball” as used herein refers primarily to balls consisting of a molded core and a cover, but also includes balls having a separate solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt, and other balls have non-wound cores.

(Molitor ‘751, col. 3, ll. 7-12 (emphasis added)).

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As stated above, Molitor '751 teaches the cover of the golf ball has a Shore C hardness of less than 85, preferably 70-80, most preferably 72-76. As described in Molitor '751's TABLE bridging columns 7 and 8, Sample 8 constitutes one of the preferred embodiments and its cover is taught to have a Shore C hardness of 73. Patent Owner has admitted that a Shore C hardness of 73 is equal to a Shore D hardness of 47, see U.S. Pat. No. 6,905,648, Table 19 (Exhibit L). Thus, a cover having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

How one of ordinary skill in the art would discover this inherent mechanical property of Shore D hardness for the polyurethane material used in Molitor '751 is by "translating" a Shore C value to a Shore D value for the polyurethane material. How one of ordinary skill in the art "translates" a Shore C value to a Shore D value is by taking the known Shore hardness values with a given range, in this instance Shore C, for given materials, in this instance polyurethane golf ball covers materials, and taking corresponding measurements with a different set of Shore gauges, in this instance Shore D (but could also be Shore A). A resulting trendline plot occurs from performing this procedure wherein the range of known Shore C values are the abscissa and the range of measured Shore D values are the ordinate. Then, said plot can be use to read equivalent Shore D value for any given Shore C value within the known range of Shore C. This is how one of ordinary skill in the art can know the equivalent Shore D or even Shore A hardness value for any given Shore C hardness value.

As stated in the request on page 58

It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the soft outer cover layer of Nesbitt and replace it with an outer cover layer made of the soft polyurethane material taught by Molitor '751 to provide a golf ball that includes "playability properties as good or better than



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balata-covered wound balls but are significantly more durable,” and “have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot” while having improved puttability. (Molitor ‘751, col. 2, ll. 61-68)

As mentioned above, Nesbitt references Molitor ‘637 as describing an number of compositions suitable for the inner cover layer 14. Of particular interest in this case are Examples 1-7 within Molitor ‘637. Examples 1-7 use a ratio of SURLYN 1605 and SURLYN 1557. The use of SURLYN grades for golf ball covers is also disclosed in U.S. Pat. No. 4,690,981. The preferred composition in the ‘981 Patent has “from about 5[%] to about 15% by weight of unsaturated carboxylic acid.” ‘981 Pat., col. 3, ll. 59-60. Those of ordinary skill in the art understand that SURLYN 1605 has been “redesignated” as SURLYN 8940 and SURLYN 1557 has been “redesignated” as SURLYN 9650, see e.g. U.S. Pat. No. 4,679,795, col. 6, ll. 10-15 and U.S. Pat. No. 5,150,906, col. 4, ll. 66. Furthermore, the Patent Owner in the Sullivan ‘873 Patent admitted that SURLYN 1605 is now designated as 8940 and was used in Nesbitt’s first (inner) layer and is a sodium ion based low acid “(less than or equal to 15 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 51,000 psi.” See ‘873 Patent, col. 2, ll. 43-50. Moreover, as shown in the “Properties Grid for Selected Industrial Grades of SURLYN” SURLYN 9650’s ordinate compared to the other grades of SURLYN is toward the “Low % Acid” side of the graph. Thus, based on this evidence, Nesbitt referencing Molitor ‘637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid. Moreover, as stated above, it has been identified that one resin in Nesbitt has a flexural modulus of 51,000 psi. This teaching of flexural modulus falls within the range claimed (15,000 psi to 70,000 psi).

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This rejection of claim 5 based on Nesbitt mentioning Molitor '637 in view of Molitor '751 as evidenced by Exhibit J was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

#### Ground 32: Patent Owner's Argument

Patent Owner does not specifically argue this rejection. The arguments are the same as those at "Ground 4: Patent Owner's Argument," *supra*.

#### Ground 32: Third Party Requester's Comments

Third Party Requester does not specifically counter argue this rejection. The counter arguments are the same as those at "Ground 4: Third Party Requester's Comments," *supra*.

#### Ground 32: Examiner's Response to the Argument and Comments

Examiner agrees with the general comments of the Third Party Requester, and the rejection of claim 5 under 35 USC 103(a) as being obvious by Nesbitt in view of Molitor '637 is maintained. See "Ground 4: Examiner's Response to the Argument and Comments," *supra*.

#### **Proposed third party requester rejection: Ground #33**

The requester submits on pages 58 through 62 that claim 5 under 35 U.S.C. § 103(a) as being obvious over Proudfit, U.S. Pat. No. 5,314,187 (Proudfit) in view of Molitor, U.S. Pat. No. 4,274,637 (Molitor '637.)

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Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Proudfit in view of Molitor '637.

Below is a claim chart identifying the claim limitations and where Proudfit discloses, teaches or suggests certain claim limitations.

Claim 5	Proudfit								
A multi-layer golf ball comprising:	"This invention relates to golf balls, and more particularly, to a golf ball having a two-layer cover." (Proudfit, col. 1, ll. 11-12)								
a spherical core;	<p>"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid <b>core 11</b> and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (Proudfit, col. 7, ll. 21-24; Figs 1 and 2)</p> <p>"Two specific solid core compositions used with the new two-layer cover had the composition describe in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball." (Proudfit, col. 7, ll. 51-55)</p> <p>See figure 1 of Proudfit for the spherical shape of the core.</p>								
an inner cover layer disposed over said spherical core to form a spherical intermediate ball,	<p>"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a <b>cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins</b> and a relatively soft outer layer 14 of polymeric material." (Proudfit, col. 7, ll. 21-24)</p> <p>"The inner layer can be molded in one of two methods:</p> <ol style="list-style-type: none"> <li>1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core.</li> <li>2. Injection mold halfshells, place halfshells over a solid core, compression mold the inner cover over the core." (Proudfit, col. 8, lines 32-38.)</li> </ol>								
said inner cover having Shore D hardness of at least 60,	<p>"The composition of the inner cover layer is described in Table 6."</p> <p style="text-align: center;"><b>TABLE 6</b></p> <table border="1"> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> </thead> <tbody> <tr> <td>Sodium- Surlin 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlin 9910</td><td>25%</td></tr> </tbody> </table>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlin 8940	75%	Zinc- Surlin 9910	25%
Composition of Inner Layer of Cover (Parts by Weight)									
Ionomer Type	Blend Ratio								
Sodium- Surlin 8940	75%								
Zinc- Surlin 9910	25%								

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	(Proudfit, col. 8, ll. 22-30) See below with respect to the Shore D limitation.								
said inner cover layer comprising an ionomeric resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid and	<p>"The composition of the inner cover layer is described in Table 6."</p> <p style="text-align: center;"><b>TABLE 6</b></p> <table border="1"> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> </thead> <tbody> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </tbody> </table> <p>(Proudfit, col. 8, ll. 22-30) See below with respect to the % by weight limitation.</p>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Composition of Inner Layer of Cover (Parts by Weight)									
Ionomer Type	Blend Ratio								
Sodium- Surlyn 8940	75%								
Zinc- Surlyn 9910	25%								
having a modulus of from about 15,000 to about 70,000 psi; and	<p>"The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as "hard SURLYNS" in U.S. Patent No. 4,884,814." (Proudfit, col. 5, l. 66 - col. 6, l. 1.) "Specific standard SURLYN resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc)...." (Proudfit, col. 6, ll. 6-7.)</p> <p>"The composition of the inner cover layer is described in Table 6."</p> <p style="text-align: center;"><b>TABLE 6</b></p> <table border="1"> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> </thead> <tbody> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </tbody> </table> <p>(Proudfit, col. 8, ll. 22-30)</p>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Composition of Inner Layer of Cover (Parts by Weight)									
Ionomer Type	Blend Ratio								
Sodium- Surlyn 8940	75%								
Zinc- Surlyn 9910	25%								
and said inner cover layer having a thickness from about 0.100 to about 0.010 inches	<p>"the thickness of the inner layer can be within the range of about 0.0250 to 0.2875 inches to provide a total diameter of the inner layer and core within the range of about 1.550 to 1.590 inch." (Proudfit, col. 7, ll. 37-40.)</p> <p>"The preferred dimensions are ... inner layer thickness of 0.037 inch ...." (Proudfit, col. 7, ll. 43-44.)</p>								
a dimpled outer cover layer disposed over said spherical intermediate ball to form a multi-layer golf ball,	see Figure 1								
said outer cover having a Shore D hardness of about 64 or less	<p>"... an <b>outer layer</b> of soft material such as balata or a <b>blend of balata and other elastomers.</b>" (Proudfit, col. 5, ll. 15-17)</p> <p>This material inherently has a Shore D hardness of less than 64, see the reasoning below.</p>								
said outer cover layer comprising a polyurethane,	<p>"... an <b>outer layer</b> of soft material such as balata or a <b>blend of balata and other elastomers.</b>" (Proudfit, col. 5, ll. 15-17)</p>								

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said outer cover layer having a modulus in a range of about 1,000 to about 30,000 psi	"The relatively soft elastomeric material of the outer layer has a flexural modulus in the range of about 20,000 to 25,000 psi, and in one specific embodiment had a flexural modulus of from 22,165 to 22,379 psi. (Proudfit, col. 6, ll. 28-31.)
said outer cover layer having a thickness of 0.010 to 0.070 inches,	"The thickness of the outer layer can be within the range of about 0.0450 to 0.0650 inch to provide a total ball diameter of 1.680 inch. The preferred dimensions are ... an outer layer thickness of 0.0525 inch...." (Proudfit, col. 7, ll. 40-46)

As shown above Proudfit discloses, teaches and suggests a three-piece golf ball (core, inner layer and outer layer) with the layers within the range of claimed thicknesses each layer made from a material having the mechanical properties substantially similar to the claimed mechanical properties. What Proudfit lacks in clearly disclosing are the particular mechanical and chemical properties of the claimed invention. However, Proudfit either incorporates by reference these mechanical and chemical properties and/or the materials used within the Proudfit golf ball inherently have these mechanical and chemical properties. For instance, Proudfit incorporates by reference U.S. Pat. No. 4,690,981 in the background of this invention. (Proudfit, col. 1, ll.39-43): The '981 patent discloses the preferably amount of unsaturated carboxylic acid is "from about 5[%] to about 15% by weight." ('981 Pat, col. 3, ll. 59-60). If Proudfit discloses using blends SURLYN the chemical for making the inner cover and the '981 Patent is the formulation for ionomer known in the art as SURLYN, then inherently grades of SURLYN such as SURLYN 8940 and SURLYN 9910 would be low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid. As taught from Exhibit I, SURLYN 8940 has a Shore D hardness of 65; SURLYN 9910 has a Shore D hardness of 64, see Exhibit I. Therefore, this cover blend inherently has a hardness of 60 or more. Proudfit

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discloses the outer layer being a blend of balata. An example of the blend is disclosed in Table 7 reproduced below.

<b>TABLE 7</b>	
<b>Composition of Outer Layer (Parts by Weight)</b>	
Trans Polyisoprene (TP-301)	60.00
Polybutadiene	40.00
Zinc Oxide	5.00
Titanium DiOxide	17.00
Ultramarine Blue color	.50
Zinc DiAcrylate	33.00
Peroxide (Varox 230 XL)	2.50
<b>Total</b>	<b>160.00</b>

Note that Trans PolyIsoprene is basically the chemical name for balata and Polybutadiene is one of the first types of synthetic rubber or elastomer. As described in the Rule 132 Declaration of Edmund A. Hebert, the outer cover layer disclosed in Proudfit is the outer cover layer for the golf ball disclosed in Exhibit A and that cover has a Shore D hardness of 52. Thus, Proudfit's outer layer cover inherently has a Shore hardness of less than 64.

While Proudfit lacks disclosing the outer layer being made from polyurethane, in an analogous golf ball, Molitor '637 teaches using polyurethane, see Molitor '637, col. 5, ll. 33-41 and col. 18, examples 16 and 17. The request points out on page 62, ll. 3-9, why the use of polyurethane to one of ordinary skill in the art would be readily apparent given that those skilled in the art were more critical of the mechanical properties of a particular material than the chemical composition (material type) of the material and those remarks are incorporated herein. In other words, it was not critical to the "golf ball inventions" of those skilled in the art as to what materials were used to construct the golf balls so long as the materials had the desired mechanical properties which would yield the particular mechanical performance parameters the inventors were trying to achieve, e.g. improved processability; improved durability; cost effectiveness; user acceptance of performance (similar "click" and "feel" to balata) of the golf

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ball product made from those materials. The request on page 42, ll. 12-20, explains why one of ordinary skill in the art would be motivated to substitute the outer cover layer taught in Molitor '637 for the outer cover layer disclosed in Proudfit and those remarks are incorporated herein.

Therefore, one of ordinary skill in the art would find the claimed invention as obvious for the motivation given in the request on page 43, ll. 12-20.

This rejection of claim 5 based on Proudfit in view of Molitor '637 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

#### Ground 33: Patent Owner's Argument

Patent Owner does not specifically argue this rejection. The arguments are the same as those at "Ground 5: Patent Owner's Argument," *supra*.

#### Ground 33: Third Party Requester's Comments

Third Party Requester does not specifically counter argue this rejection. The counter arguments are the same as those at "Ground 5: Third Party Requester's Comments," *supra*.

#### Ground 33: Examiner's Response to the Argument and Comments

Examiner agrees with the general comments of the Third Party Requester, and the rejection of claim 5 under 35 USC 103(a) as being obvious by Nesbitt in view of Molitor '637 is maintained. See "Ground 5: Examiner's Response to the Argument and Comments," *supra*.

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**Proposed third party requester rejection: Ground #34**

The requester submits on pages 63 through 64 that claim 5 under 35 U.S.C. § 103(a) as being obvious over Proudfit, U.S. Pat. No. 5,314,187 (Proudfit) in view of Wu, U.S. Pat. No. 5,334,673 (Wu).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Proudfit in view of Wu, as evidenced by Exhibit C.

Below is a claim chart identifying the claim limitations and where Proudfit discloses, teaches or suggests certain claim limitations.

Claim 5	Proudfit
A multi-layer golf ball comprising:	"This <b>invention relates to golf balls</b> , and more particularly, to a golf ball having a two-layer cover." (Proudfit, col. 1, ll. 11-12)
a spherical core;	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid <b>core 11</b> and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (Proudfit, col. 7, ll. 21-24; Figs 1 and 2) "Two specific solid core compositions used with the new two-layer cover had the composition describe in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball." (Proudfit, col. 7, ll. 51-55) See figure 1 with respect to showing the spherical shaped core.
an inner cover layer disposed over said spherical core to form a spherical intermediate ball,	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a <b>cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins</b> and a relatively soft outer layer 14 of polymeric material." (Proudfit, col. 7, ll. 21-24) "The inner layer can be molded in one of two methods: 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. 2. Injection mold halfshells, place halfshells over a solid core,



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	compression mold the inner cover over the core.” (Proudfit, col. 8, lines 32-38.)								
said inner cover having Shore D hardness of at least 60,	<p>“The composition of the inner cover layer is described in Table 6.”</p> <p style="text-align: center;"><b>TABLE 6</b></p> <table border="1"> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> </thead> <tbody> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </tbody> </table> <p>(Proudfit, col. 8, ll. 22-30) See below with respect to the Shore D limitation.</p>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Composition of Inner Layer of Cover (Parts by Weight)									
Ionomer Type	Blend Ratio								
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said inner cover layer comprising an ionomeric resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid and	<p>“The composition of the inner cover layer is described in Table 6.”</p> <p style="text-align: center;"><b>TABLE 6</b></p> <table border="1"> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> </thead> <tbody> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </tbody> </table> <p>(Proudfit, col. 8, ll. 22-30) See below with respect to the % by weight limitation.</p>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
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Sodium- Surlyn 8940	75%								
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having a modulus of from about 15,000 to about 70,000 psi; and	<p>“The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as “hard SURLYNS” in U.S. Patent No. 4,884,814.” (Proudfit, col. 5, l. 66 - col. 6, l. 1.)</p> <p>“Specific standard SURLYN resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc)....” (Proudfit, col. 6, ll. 6-7.)</p> <p>“The composition of the inner cover layer is described in Table 6.”</p> <p style="text-align: center;"><b>TABLE 6</b></p> <table border="1"> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> </thead> <tbody> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </tbody> </table> <p>(Proudfit, col. 8, ll. 22-30)</p>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
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Ionomer Type	Blend Ratio								
Sodium- Surlyn 8940	75%								
Zinc- Surlyn 9910	25%								
and said inner cover layer having a thickness from about 0.100 to about 0.010 inches	<p>“the thickness of the inner layer can be within the range of about 0.0250 to 0.2875 inches to provide a total diameter of the inner layer and core within the range of about 1.550 to 1.590 inch.” (Proudfit, col. 7, ll. 37-40.)</p> <p>“The preferred dimensions are ... inner layer thickness of 0.037 inch ....” (Proudfit, col. 7, ll. 43-44.)</p>								

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a dimpled outer cover layer disposed over said spherical intermediate ball to form a multi-layer golf ball,	see Figure 1.
said outer cover having a Shore D hardness of about 64 or less	"... an <b>outer layer</b> of soft material such as balata or a <b>blend of balata and other elastomers</b> ." (Proudfit, col. 5, ll. 15-17) This material inherently has a Shore D hardness of less than 64, see the reasoning below.
said outer cover layer comprising a polyurethane,	"... an <b>outer layer</b> of soft material such as balata or a <b>blend of balata and other elastomers</b> ." (Proudfit, col. 5, ll. 15-17)
said outer cover layer having a modulus in a range of about 1,000 to about 30,000 psi	"The relatively soft elastomeric material of the outer layer has a flexural modulus in the range of about 20,000 to 25,000 psi, and in one specific embodiment had a flexural modulus of from 22,165 to 22,379 psi. (Proudfit, col. 6, ll. 28-31.)
said outer cover layer having a thickness of 0.010 to 0.070 inches,	"The thickness of the outer layer can be within the range of about 0.0450 to 0.0650 inch to provide a total ball diameter of 1.680 inch. The preferred dimensions are ... an outer layer thickness of 0.0525 inch...." (Proudfit, col. 7, ll. 40-46)

Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that SURLYN covered golf balls lack the "click" and "feel" of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar "click" and "feel" of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. This teaching of Shore D hardness is directed to an intermediate curing step product prior to the final molding process to finish the golf ball. Exhibit C demonstrates the actual finished golf ball product having the cover layer that Wu teaches within its disclosure. Exhibit C teaches that the golf ball taught therein is covered by the following patents: 4,783,078; 4,846,910; 4,858,923; 4,904,320; 4,915,390; 5,007,594; 5,080,367; 5,133,509; **5,334,673**; and D339,074. The '673 Patent teaches the cover sock of the

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Exhibit C finished golf ball. Exhibit C teaches that the golf ball taught therein has a cover material made from an “elastomer”, having a thickness of .050”, and 58 Shore D hardness. All three properties are within the range of mechanical properties of the claim invention (polyurethane is an elastomer, cover layer thickness ranges from 0.010 to 0.070 inches and the Shore D hardness is less than 64). Because it has been admitted by the inventor of the Sullivan ‘893 patent that the particular chemical properties of the materials (the chemical composition) used in the construction of a golf ball lack criticality as compared to the mechanical properties (the Shore D hardness, flexural modulus, layer thickness) of those compounds used for constructing the different layers (Exhibit G at 334), one of ordinary skill in the art at the time the invention was made would find it obvious to incorporate the teachings of Wu which inherently include the teachings of Shore hardness for the fully cured cover layer as taught in Exhibit C as obvious equivalent materials in order to achieve the same end result of providing a cover layer that has the same “click” and “feel” of a balata cover which the extra durability of an elastomeric material.

This rejection of claim 5 based on Proudfit in view of Wu as evidenced by Exhibit C was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

#### Ground 34: Patent Owner’s Argument

Patent Owner does not specifically argue this rejection. The arguments are the same as those at “Ground 6: Patent Owner’s Argument,” *supra*.

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## Ground 34: Third Party Requester's Comments

Third Party Requester does not specifically counter argue this rejection. The counter arguments are the same as those at "Ground 6: Third Party Requester's Comments," *supra*.

## Ground 34: Examiner's Response to the Argument and Comments

Examiner agrees with the general comments of the Third Party Requester, and the rejection of claim 5 under 35 USC 103(a) as being obvious by Nesbitt in view of Molitor '637 is maintained. See "Ground 6: Examiner's Response to the Argument and Comments," *supra*.

**Proposed third party requester rejection: Ground #35**

The requester submits on pages 64 through 66 that claim 5 under 35 U.S.C. § 103(a) as being obvious over Proudfit, U.S. Pat. No. 5,314,187 (Proudfit) in view of Molitor et al., U.S. Pat. No. 4,674,751 (Molitor '751).

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Proudfit in view of Molitor '751.

Below is a claim chart identifying the claim limitations and where Proudfit discloses, teaches or suggests certain claim limitations.

Claim 5	Proudfit
A multi-layer golf ball comprising:	"This <b>invention relates to golf balls</b> , and more particularly, to a golf ball having a two-layer cover." (Proudfit, col. 1, ll. 11-12)
a spherical core;	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid <b>core 11</b> and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (Proudfit, col. 7, ll. 21-24;

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	<p>Figs 1 and 2)</p> <p>"Two specific solid core compositions used with the new two-layer cover had the composition describe in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball." (Proudfit, col. 7, ll. 51-55)</p> <p>See figure 1 for the spherical shaped core.</p>								
an inner cover layer disposed over said spherical core to form a spherical intermediate ball,	<p>"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a <b>cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins</b> and a relatively soft outer layer 14 of polymeric material." (Proudfit, col. 7, ll. 21-24)</p> <p>"The inner layer can be molded in one of two methods:</p> <ol style="list-style-type: none"> <li>1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core.</li> <li>2. Injection mold halfshells, place halfshells over a solid core, compression mold the inner cover over the core." (Proudfit, col. 8, lines 32-38.)</li> </ol>								
said inner cover having Shore D hardness of at least 60,	<p>"The composition of the inner cover layer is described in Table 6."</p> <table border="1"> <caption>TABLE 6</caption> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> </thead> <tbody> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </tbody> </table> <p>(Proudfit, col. 8, ll. 22-30)</p> <p>See below with respect to the Shore D limitation.</p>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
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Sodium- Surlyn 8940	75%								
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having a modulus of from about 15,000 to about 70,000 psi; and	<p>"The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as "hard SURLYNS" in U.S. Patent No. 4,884,814." (Proudfit, col. 5, l. 66 - col. 6, l. 1.)</p> <p>"Specific standard SURLYN resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc)...." (Proudfit, col.</p>								

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	<p>6, ll. 6-7.)          "The composition of the inner cover layer is described in Table 6."</p> <p style="text-align: center;"><b>TABLE 6</b>  <b>Composition of Inner Layer of Cover</b>  <b>(Parts by Weight)</b></p> <table> <tr> <th><b>Ionomer Type</b></th><th><b>Blend Ratio</b></th></tr> <tr> <td><b>Sodium- Surlyn 8940</b></td><td><b>75%</b></td></tr> <tr> <td><b>Zinc- Surlyn 9910</b></td><td><b>25%</b></td></tr> </table> <p>(Proudfit, col. 8, ll. 22-30)</p>	<b>Ionomer Type</b>	<b>Blend Ratio</b>	<b>Sodium- Surlyn 8940</b>	<b>75%</b>	<b>Zinc- Surlyn 9910</b>	<b>25%</b>
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<b>Sodium- Surlyn 8940</b>	<b>75%</b>						
<b>Zinc- Surlyn 9910</b>	<b>25%</b>						
and said inner cover layer having a thickness from about 0.100 to about 0.010 inches	<p>"the thickness of the inner layer can be within the range of about 0.0250 to 0.2875 inches to provide a total diameter of the inner layer and core within the range of about 1.550 to 1.590 inch." (Proudfit, col. 7, ll. 37-40.)          "The preferred dimensions are ... inner layer thickness of 0.037 inch ...." (Proudfit, col. 7, ll.43-44.)</p>						
a dimpled outer cover layer disposed over said spherical intermediate ball to form a multi-layer golf ball,	see Figure 1						
said outer cover having a Shore D hardness of about 64 or less	<p>"... an <b>outer layer</b> of soft material such as balata or a <b>blend of balata and other elastomers</b>." (Proudfit, col. 5, ll. 15-17)          This material inherently has a Shore D hardness of less than 64, see the reasoning below.</p>						
said outer cover layer comprising a polyurethane,	"... an <b>outer layer</b> of soft material such as balata or a <b>blend of balata and other elastomers</b> ." (Proudfit, col. 5, ll. 15-17)						
said outer cover layer having a modulus in a range of about 1,000 to about 30,000 psi	"The relatively soft elastomeric material of the outer layer has a flexural modulus in the range of about 20,000 to 25,000 psi, and in one specific embodiment had a flexural modulus of from 22,165 to 22,379 psi. (Proudfit, col. 6, ll. 28-31.)						
said outer cover layer having a thickness of 0.010 to 0.070 inches,	"The thickness of the outer layer can be within the range of about 0.0450 to 0.0650 inch to provide a total ball diameter of 1.680 inch. The preferred dimensions are ... an outer layer thickness of 0.0525 inch...." (Proudfit, col. 7, ll. 40-46)						

As expressed in the request on page 64 and identified above within the claim chart, Proudfit teaches a golf ball have a two-piece cover including a hard, ionomeric inner cover layer and a soft balata blend outer cover layer. Proudfit lacks in disclosing the use of polyurethane as the material for the outer cover layer. Instead, as shown in Table 7, reproduced below, Proudfit discloses the outer cover layer being made of a blend of balata.

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TABLE 7	
Composition of Outer Layer (Parts by Weight)	
Trans Polyisoprene (TP-301)	60.00
Polybutadiene	40.00
Zinc Oxide	5.00
Titanium Dioxide	17.00
Ultramarine Blue color	.30
Zinc DiAcrylate	35.00
Peroxide (Varox 230 XL)	2.50
Total	160.00

However, those skilled in the art understand the disadvantages of balata covered golf balls. As admitted by the patent owner:

[d]espite all the benefits of balata, balata covered golf balls are easily cut and/or damaged if mis-hit. Golf balls produced with balata or balata-containing cover compositions therefore have a relatively short lifespan.

(Sullivan '873, col. 1, ll. 39-42). With this disadvantage of balata covered golf balls, golf ball designers looked for materials that would provide the same "click" and "feel" golfers expected and have increased durability.

As pointed out in the request on page 28, lines 4-15, in an analogous golf ball, Molitor '751 teaches that:

It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core a cover having a shore C hardness less than 85, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a thermoplastic urethane having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55. The ionomer comprises olefinic groups having two to four carbon atoms copolymerized with acrylic or methacrylic acid groups and cross-linked with metal ions, preferably sodium or zinc ions. **The primary components of the blended cover are set at a weight ratio so as to result in a cover material after molding having a shore C hardness within the range of 70 to 85, preferably 72 to 76.** Preferably, the urethane component of the cover material has a tensile strength greater than 2500 psi and an elongation at break greater than 250%. A preferred cover material comprises about 8 parts of the thermoplastic urethane and between 1 and 4 parts ionomer. Preferably, the cover is no greater than 0.060 inch thick. Thinner covers appear to maximize the short iron playability characteristics of the balls.

(Molitor '751, col. 33-57 (emphasis added)). Thus, Molitor '751 teaches having a outer cover layer with a Shore C hardness less than 85 and preferably between 72 and 76. Moreover,

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Molitor '751 teaches what golf balls are included in the definition of "two-piece" ball within its instant specification.

**The phrase "two-piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, but also includes balls having a separate solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt, and other balls having non-wound cores.**

Molitor '751, col. 3, ll. 7-12 (emphasis added)). Proudfit, likewise, teaches the two-piece golf balls can fit within this definition.

FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material.

(Proudfit, col. 7, ll. 21-24).

As stated above, Molitor '751 teaches the cover of the golf ball has a Shore C hardness of less than 85, preferably 70-80, most preferably 72-76. As described in Molitor '751's TABLE bridging columns 7 and 8, Sample 8 constitutes one of the preferred embodiments and its cover is taught to have a Shore C hardness of 73. Patent Owner has admitted that a Shore C hardness of 73 is equal to a Shore D hardness of 47, see U.S. Pat. No. 6,905,648, Table 19 (Exhibit L). Thus, a cover having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

How one of ordinary skill in the art would discover this inherent mechanical property of Shore D hardness for the polyurethane material used in Molitor '751 is by "translating" a Shore C value to a Shore D value for the polyurethane material. How one of ordinary skill in the art "translates" a Shore C value to a Shore D value is by taking the known Shore hardness values with a given range, in this instance Shore C, for given materials, in this instance a polyurethane golf ball covers materials, and taking corresponding measurements with a different set of Shore gauges, in this instance Shore D (but could also be Shore A). A resulting trendline plot occurs



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from performing this procedure wherein the range of known Shore C values are the abscissa and the range of measured Shore D values are the ordinate. Then, said plot can be use to read equivalent Shore D value for any given Shore C value within the known range of Shore C. This is how one of ordinary skill in the art can know the equivalent Shore D or even Shore A hardness value for any given Shore C hardness value.

As stated in the request on page 29

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the soft outer cover layer of Nesbitt and replace it with an outer cover layer made of the soft polyurethane material taught by Molitor '751 to provide a golf ball that includes "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, ll. 61-68)

This rejection of claim 5 based on Proudfit in view of Molitor '751 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

#### Ground 35: Patent Owner's Argument

Patent Owner does not specifically argue this rejection. The arguments are the same as those at "Ground 7: Patent Owner's Argument," *supra*.

#### Ground 35: Third Party Requester's Comments

Third Party Requester does not specifically counter argue this rejection. The counter arguments are the same as those at "Ground 7: Third Party Requester's Comments," *supra*.

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**Ground 35: Examiner's Response to the Argument and Comments**

Examiner agrees with the general comments of the Third Party Requester, and the rejection of claim 5 under 35 USC 103(a) as being obvious by Nesbitt in view of Molitor '637 is maintained. See "Ground 7: Examiner's Response to the Argument and Comments," *supra*.

**Re. Claim 6****Proposed third party requester rejection: Ground #36**

The requester submits on pages 66 through 67 that claim 6 is unpatentable under 35 U.S.C. § 102(b) as being anticipated by Nesbitt, U.S. Pat. No. 4,431,193.

In the request on pages 66 through 67 the third party requester proposes that claim 6 be rejected based upon Nesbitt alone with the incorporation by reference of Molitor '637. The third party requester points out that Molitor '637 is incorporated by reference into Nesbitt because Nesbitt refers to Molitor '637. (See Nesbitt col. 3, ll. 54-60).

**This rejection is adopted in this office action.**

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt in view of Molitor '637.

The below claim chart identifies the new limitations introduced by dependent claim 6.

Claim 6	Nesbitt
wherein the Shore D hardness of said outer cover layer is less than the Shore D hardness of said inner cover layer.	"The disclosure embraces a golf ball and method of making same wherein the golf ball has a ... multilayer cover construction which involves a first layer or play of molded hard, high flexural modulus resinous material on the core, and a second or cover layer of soft, low flexural modulus resinous material molded over the first layer to form a finished golf ball." (Nesbitt,

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	abstract). "[I]nner cover 14 of molded hard, high flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. DuPont de Nemours." (Nesbitt, col. 2, ll. 36-38). Sullivan '873 Patent: "Type 1605 SURLYN (now designated SURLYN 8940) ('873 patent, col. 2, ll. 46-47.) <u><b>Molitor '637</b></u> teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133.
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As mentioned above, Nesbitt incorporating by reference Molitor '637 as describing an number of compositions suitable for the inner cover layer 14. Of particular interest in this case are Examples 1-7 within Molitor '637. Examples 1-7 use a ratio of SURLYN 1605 and SURLYN 1557. The use of SURLYN grades for golf ball covers is also disclosed in U.S. Pat. No. 4,690,981. The preferred composition in the '981 Patent has "from about 5[%] to about 15% by weight of unsaturated carboxylic acid." '981 Pat., col. 3, ll. 59-60. Those of ordinary skill in the art understand that SURLYN 1605 has been "redesignated" as SURLYN 8940 and SURLYN 1557 has been "redesignated" as SURLYN 9650, see e.g. U.S. Pat. No. 4,679,795, col. 6, ll. 10-15 and U.S. Pat. No. 5,150,906, col. 4, ll. 66. Furthermore, the Patent Owner in the Sullivan '873 Patent admitted that SURLYN 1605 is now designated as 8940 and was used in Nesbitt's first (inner) layer and is a sodium ion based low acid "(less than or equal to 15 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 51,000 psi." See '873 Patent, col. 2, ll. 43-50. Moreover, as shown in the "Properties Grid for Selected Industrial Grades of SURLYN" SURLYN 9650's ordinate compared to the other grades of SURLYN is toward the "Low % Acid" side of the graph. Thus, based on this evidence, Nesbitt referencing Molitor '637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid. Also, as mentioned above, Molitor '637 teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane

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identified as ESTANE 58133. A review of the scientific literature yields that ESTANE 58133 has an inherent Shore D hardness of 55, see Exhibit J “ESTANE 58133 TPU Product Data Sheet”. A Shore D hardness of 55 is within the range claimed of Shore D hardness less than 64. Therefore, Molitor ‘637’s teaching of using ESTANE 58133 inherently meets the claim limitation of providing a outer cover layer of polyurethane material having a Shore hardness of less than 64. Nesbitt discloses its outer layer was made from SURLYN 1855 (now SURLYN 9020). This material had inherently flexural modulus of about 14,000 psi and a Shore hardness of 55, see Exhibit I “Typical Properties for Selected Grades of SURLYN”. Moreover, as admitted by the inventor Sullivan of the ‘873 patent, golf ball designers knew that the mechanical properties of the materials used as a golf-ball cover layer were more critical to golf ball performance than the actual materials themselves, see Exhibit G at 334.

This rejection of claim 6 based on Nesbitt incorporating Molitor ‘637 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

#### Ground 36: Patent Owner’s Argument

Patent Owner does not argue this rejection.

#### Ground 36: Third Party Requester’s Comments

Third Party Requester’s arguments for this claim are the same as given *supra* at “Ground 1: Third Party Requester’s Comments.”

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**Ground 36: Examiner's Response to the Argument and Comments**

Upon review, the Examiner agrees with the arguments of the Third Party Requester and adopts this suggested rejection. See "Ground 1: Examiner's Response to the Argument and Comments," *supra*.

**Proposed third party requester rejection: Ground #37**

As an alternative to Ground #36, the requester submits on pages 66 and 67 of the request that claim 6 is unpatentable under 35 U.S.C. § 103(a) as being obvious over Nesbitt, U.S. Pat. No. 4,431,193, in view of Molitor et al., U.S. Pat. No. 4,274,637, (Molitor '637).

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt in view of Molitor '637.

The below claim chart identifies the new limitations introduced by dependent claim 6.

Claim 6	Nesbitt
wherein the Shore D hardness of said outer cover layer is less than the Shore D hardness of said inner cover layer.	<p>"The disclosure embraces a golf ball and method of making same wherein the golf ball has a ... multilayer cover construction which involves a first layer or play of molded hard, high flexural modulus resinous material on the core, and a second or cover layer of soft, low flexural modulus resinous material molded over the first layer to form a finished golf ball." (Nesbitt, abstract).</p> <p>"[I]nner cover 14 of molded hard, high flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. DuPont de Nemours." (Nesbitt, col. 2, ll. 36-38).</p> <p>Sullivan '873 Patent: "Type 1605 SURLYN (now designated SURLYN 8940) ('873 patent, col. 2, ll. 46-47.)</p> <p><b>Molitor '637</b> teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133.</p>

As mentioned above, Nesbitt references Molitor '637 as describing an number of compositions suitable for the inner cover layer 14. Of particular interest in this case are Examples 1-7 within Molitor '637. Examples 1-7 use a ratio of SURLYN 1605 and SURLYN

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1557. The use of SURLYN grades for golf ball covers is also disclosed in U.S. Pat. No. 4,690,981. The preferred composition in the '981 Patent has "from about 5[%] to about 15% by weight of unsaturated carboxylic acid." '981 Pat., col. 3, ll. 59-60. Those of ordinary skill in the art understand that SURLYN 1605 has been "redesignated" as SURLYN 8940 and SURLYN 1557 has been "redesignated" as SURLYN 9650, see e.g. U.S. Pat. No. 4,679,795, col. 6, ll. 10-15 and U.S. Pat. No. 5,150,906, col. 4, ll. 66. Furthermore, the Patent Owner in the Sullivan '873 Patent admitted that SURLYN 1605 is now designated as 8940 and was used in Nesbitt's first (inner) layer and is a sodium ion based low acid "(less than or equal to 15 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 51,000 psi." See '873 Patent, col. 2, ll. 43-50. Moreover, as shown in the "Properties Grid for Selected Industrial Grades of SURLYN" SURLYN 9650's ordinate compared to the other grades of SURLYN is toward the "Low % Acid" side of the graph. Thus, based on this evidence, Nesbitt referencing Molitor '637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid. Also, as mentioned above, Molitor '637 teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133. A review of the scientific literature yields that ESTANE 58133 has an inherent Shore D hardness of 55, see Exhibit J "ESTANE 58133 TPU Product Data Sheet". A Shore D hardness of 55 is within the range claimed of Shore D hardness less than 64. Therefore, Molitor '637's teaching of using ESTANE 58133 inherently meets the claim limitation of providing a outer cover layer of polyurethane material having a Shore hardness of less than 64. Nesbitt discloses its outer layer was made from SURLYN 1855 (now SURLYN 9020). This material had inherently flexural modulus of about 14,000 psi and a Shore hardness

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of 55, see Exhibit I “Typical Properties for Selected Grades of SURLYN”. Moreover, as admitted by the inventor Sullivan of the ‘873 patent, golf ball designers knew that the mechanical properties of the materials used as a golf-ball cover layer were more critical to golf ball performance than the actual materials themselves, see Exhibit G at 334. Thus, because the actual chemical composition of the material is not critical to the practice of the invention with respect to its mechanical performance, i.e. its “click and feel” for a golfer, one of ordinary skill in the art at the time the invention was made would find it obvious to substitute one material for another material if both materials had substantially the same mechanical properties.

This rejection of claim 6 based on Nesbitt in view of Molitor ‘637 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

#### Ground 37: Patent Owner’s Argument

Patent Owner does not specifically argue this rejection. The arguments are the same as those at “Ground 2: Patent Owner’s Argument,” *supra*.

#### Ground 37: Third Party Requester’s Comments

Third Party Requester does not specifically counter argue this rejection. The counter arguments are the same as those at “Ground 2: Third Party Requester’s Comments,” *supra*.

#### Ground 37: Examiner’s Response to the Argument and Comments

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Examiner agrees with the general comments of the Third Party Requester, and the rejection of claim 6 under 35 USC 103(a) as being obvious by Nesbitt in view of Molitor '637 is maintained. See "Ground 2: Examiner's Response to the Argument and Comments," *supra*.

**Proposed third party requester rejection: Ground #38**

As an alternative to Ground #36, the requester submits on pages 66 and 67 of the request that claim 6 is unpatentable under 35 U.S.C. § 103(a) as being obvious over Nesbitt, U.S. Pat. No. 4,431,193 in view of Wu, U.S. Pat. No. 4,274,637, (Molitor '637).

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt mentioning Molitor et al., U.S. Pat. No. 4,274,637 (Molitor '637) in view of Wu, as evidenced by Exhibit C.

The below claim chart identifies the new limitations introduced by dependent claim 6.

Claim 6	Nesbitt
wherein the Shore D hardness of said outer cover layer is less than the Shore D hardness of said inner cover layer.	<p>"The disclosure embraces a golf ball and method of making same wherein the golf ball has a ... multilayer cover construction which involves a first layer or play of molded hard, high flexural modulus resinous material on the core, and a second or cover layer of soft, low flexural modulus resinous material molded over the first layer to form a finished golf ball." (Nesbitt, abstract).</p> <p>"[I]nner cover 14 of molded hard, high flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. DuPont de Nemours." (Nesbitt, col. 2, ll. 36-38).</p> <p>Sullivan '873 Patent: "Type 1605 SURLYN (now designated SURLYN 8940) ('873 patent, col. 2, ll. 46-47.)</p> <p><b>Molitor '637</b> teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133.</p>

As mentioned above, Nesbitt references Molitor '637 as describing an number of compositions suitable for the inner cover layer 14. Of particular interest in this case are



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Examples 1-7 within Molitor '637. Examples 1-7 use a ratio of SURLYN 1605 and SURLYN 1557. The use of SURLYN grades for golf ball covers is also disclosed in U.S. Pat. No. 4,690,981. The preferred composition in the '981 Patent has "from about 5[%] to about 15% by weight of unsaturated carboxylic acid." '981 Pat., col. 3, ll. 59-60. Those of ordinary skill in the art understand that SURLYN 1605 has been "redesignated" as SURLYN 8940 and SURLYN 1557 has been "redesignated" as SURLYN 9650, see e.g. U.S. Pat. No. 4,679,795, col. 6, ll. 10-15 and U.S. Pat. No. 5,150,906, col. 4, ll. 66. Furthermore, the Patent Owner in the Sullivan '873 Patent admitted that SURLYN 1605 is now designated as 8940 and was used in Nesbitt's first (inner) layer and is a sodium ion based low acid "(less than or equal to 15 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 51,000 psi." See '873 Patent, col. 2, ll. 43-50. Moreover, as shown in the "Properties Grid for Selected Industrial Grades of SURLYN" SURLYN 9650's ordinate compared to the other grades of SURLYN is toward the "Low % Acid" side of the graph. Thus, based on this evidence, Nesbitt referencing Molitor '637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid. Also, as mentioned above, Molitor '637 teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133. A review of the scientific literature yields that ESTANE 58133 has an inherent Shore D hardness of 55, see Exhibit J "ESTANE 58133 TPU Product Data Sheet". A Shore D hardness of 55 is within the range claimed of Shore D hardness less than 64. Therefore, Molitor '637's teaching of using ESTANE 58133 inherently meets the claim limitation of providing a outer cover layer of polyurethane material having a Shore hardness of less than 64. Nesbitt discloses its outer layer was made from SURLYN 1855 (now SURLYN

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9020). This material had inherently flexural modulus of about 14,000 psi and a Shore hardness of 55, see Exhibit I "Typical Properties for Selected Grades of SURLYN". Moreover, as admitted by the inventor Sullivan of the '873 patent, golf ball designers knew that the mechanical properties of the materials used as a golf-ball cover layer were more critical to golf ball performance than the actual materials themselves, see Exhibit G at 334. Thus, because the actual chemical composition of the material is not critical to the practice of the invention with respect to its mechanical performance, i.e. its "click and feel" for a golfer, one of ordinary skill in the art at the time the invention was made would find it obvious to substitute one material for another material if both materials had substantially the same mechanical properties.

Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that SURLYN covered golf balls lack the "click" and "feel" of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar "click" and "feel" of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. This teaching of Shore D hardness is directed to an intermediate curing step product prior to the final molding process to finish the golf ball. Exhibit C demonstrates the actual finished golf ball product having the cover layer that Wu teaches within its disclosure. Exhibit C teaches that the golf ball taught therein is covered by the following patents: 4,783,078; 4,846,910; 4,858,923; 4,904,320; 4,915,390; 5,007,594; 5,080,367; 5,133,509; **5,334,673**; and D339,074. The '673 Patent teaches the cover sock of the Exhibit C finished golf ball. Exhibit C teaches that the golf ball taught therein has a cover

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material made from an “elastomer”, having a thickness of .050”, and 58 Shore D hardness. All three properties are within the range of mechanical properties of the claim invention (polyurethane is an elastomer, cover layer thickness ranges from 0.010 to 0.070 inches and the Shore D hardness is less than 64). Because it has been admitted by the inventor of the Sullivan ‘893 patent that the particular chemical properties of the materials (the chemical composition) used in the construction of a golf ball lack criticality as compared to the mechanical properties (the Shore D hardness, flexural modulus, layer thickness) of those compounds used for constructing the different layers (Exhibit G at 334), one of ordinary skill in the art at the time the invention was made would find it obvious to incorporate the teachings of Wu which inherently include the teachings of Shore hardness for the fully cured cover layer as taught in Exhibit C as obvious equivalent materials in order to achieve the same end result of providing a cover layer that has the same “click” and “feel” of a balata cover which the extra durability of an elastomeric material.

This rejection of claim 6 based on Nesbitt mentioning Molitor ‘637 in view of Wu as evidenced by Exhibit C was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

#### Ground 38: Patent Owner’s Argument

Patent Owner does not specifically argue this rejection. The arguments are the same as those at “Ground 3: Patent Owner’s Argument and Ground 31: Patent Owner’s Argument,” *supra*.

#### Ground 38: Third Party Requester’s Comments

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Third Party Requester does not specifically counter argue this rejection. The counter arguments are the same as those at "Ground 3: Third Party Requester's Comments and Ground 31: Third Party Requester's Comments," *supra*.

#### Ground 38: Examiner's Response to the Argument and Comments

Examiner agrees with the general comments of the Third Party Requester, and the rejection of claim 6 under 35 USC 103(a) as being obvious by Nesbitt in view of Molitor '637 is maintained. See "Ground 3: Examiner's Response to the Argument and Comments and Ground 31: Examiner's Response to the Argument and Comments," *supra*.

#### Proposed third party requester rejection: Ground #39

As an alternative to Ground #36, the requester submits on pages 66 and 67 of the request that claim 6 is unpatentable under 35 U.S.C. § 103(a) as being obvious over Nesbitt, U.S. Pat. No. 4,431,193, in view of Molitor et al., U.S. Pat. No. 4,674,751, (Molitor '751).

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt mentioning Molitor et al., U.S. Pat. No. 4,274,637 (Molitor '637) in view of Molitor '751.

The below claim chart identifies the new limitations introduced by dependent claim 6.

Claim 6	Nesbitt
wherein the Shore D hardness of said outer cover layer is less than the Shore D hardness of said inner cover layer.	"The disclosure embraces a golf ball and method of making same wherein the golf ball has a ... multilayer cover construction which involves a first layer or play of molded hard, high flexural modulus resinous material on the core, and a second or cover layer of soft, low flexural modulus resinous material molded over the first layer to form a finished golf ball." (Nesbitt, abstract). "[I]nner cover 14 of molded hard, high flexural modulus resinous material

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	<p>such as type 1605 SURLYN marketed by E.I. DuPont de Nemours." (Nesbitt, col. 2, ll. 36-38).</p> <p>Sullivan '873 Patent: "Type 1605 SURLYN (now designated SURLYN 8940) ('873 patent, col. 2, ll. 46-47.)</p> <p><b>Molitor '637</b> teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133.</p>
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As mentioned above, Nesbitt references Molitor '637 as describing an number of compositions suitable for the inner cover layer 14. Of particular interest in this case are Examples 1-7 within Molitor '637. Examples 1-7 use a ratio of SURLYN 1605 and SURLYN 1557. The use of SURLYN grades for golf ball covers is also disclosed in U.S. Pat. No. 4,690,981. The preferred composition in the '981 Patent has "from about 5[%] to about 15% by weight of unsaturated carboxylic acid." '981 Pat., col. 3, ll. 59-60. Those of ordinary skill in the art understand that SURLYN 1605 has been "redesignated" as SURLYN 8940 and SURLYN 1557 has been "redesignated" as SURLYN 9650, see e.g. U.S. Pat. No. 4,679,795, col. 6, ll. 10-15 and U.S. Pat. No. 5,150,906, col. 4, ll. 66. Furthermore, the Patent Owner in the Sullivan '873 Patent admitted that SURLYN 1605 is now designated as 8940 and was used in Nesbitt's first (inner) layer and is a sodium ion based low acid "(less than or equal to 15 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 51,000 psi." See '873 Patent, col. 2, ll. 43-50. Moreover, as shown in the "Properties Grid for Selected Industrial Grades of SURLYN" SURLYN 9650's ordinate compared to the other grades of SURLYN is toward the "Low % Acid" side of the graph. Thus, based on this evidence, Nesbitt referencing Molitor '637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid. Also, as mentioned above, Molitor '637 teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133. A review of the scientific literature yields that ESTANE 58133

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has an inherent Shore D hardness of 55, see Exhibit J “ESTANE 58133 TPU Product Data Sheet”. A Shore D hardness of 55 is within the range claimed of Shore D hardness less than 64. Therefore, Molitor ‘637’s teaching of using ESTANE 58133 inherently meets the claim limitation of providing a outer cover layer of polyurethane material having a Shore hardness of less than 64. Nesbitt discloses its outer layer was made from SURLYN 1855 (now SURLYN 9020). This material had inherently flexural modulus of about 14,000 psi and a Shore hardness of 55, see Exhibit I “Typical Properties for Selected Grades of SURLYN”. Moreover, as admitted by the inventor Sullivan of the ‘873 patent, golf ball designers knew that the mechanical properties of the materials used as a golf-ball cover layer were more critical to golf ball performance than the actual materials themselves, see Exhibit G at 334. Thus, because the actual chemical composition of the material is not critical to the practice of the invention with respect to its mechanical performance, i.e. its “click and feel” for a golfer, one of ordinary skill in the art at the time the invention was made would find it obvious to substitute one material for another material if both materials had substantially the same mechanical properties.

In an analogous golf ball, Molitor ‘751 teaches that:

It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core **a cover having a shore C hardness less than 85**, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of **(1) a thermoplastic urethane having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55.**

(Molitor ‘751, col. 2, ll.33-49 (emphasis added)).

Moreover, in explaining what constitutes a two-piece golf ball, Molitor ‘751 teaches that:

The phrase “two piece ball” as used herein refers primarily to balls consisting of a molded core and a cover, **but also includes balls having a separate solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt, and other balls have non-wound cores.**

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(Molitor '751, col. 3, ll. 7-12 (emphasis added)).

As stated above, Molitor '751 teaches the cover of the golf ball has a Shore C hardness of less than 85, preferably 70-80, most preferably 72-76. As described in Molitor '751's TABLE bridging columns 7 and 8, Sample 8 constitutes one of the preferred embodiments and its cover is taught to have a Shore C hardness of 73. Patent Owner has admitted that a Shore C hardness of 73 is equal to a Shore D hardness of 47, see U.S. Pat. No. 6,905,648, Table 19 (Exhibit L). Thus, a cover having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

How one of ordinary skill in the art would discover this inherent mechanical property of Shore D hardness for the polyurethane material used in Molitor '751 is by "translating" a Shore C value to a Shore D value for the polyurethane material. How one of ordinary skill in the art "translates" a Shore C value to a Shore D value is by taking the known Shore hardness values with a given range, in this instance Shore C, for given materials, in this instance polyurethane golf ball covers materials, and taking corresponding measurements with a different set of Shore gauges, in this instance Shore D (but could also be Shore A). A resulting trendline plot occurs from performing this procedure wherein the range of known Shore C values are the abscissa and the range of measured Shore D values are the ordinate. Then, said plot can be use to read equivalent Shore D value for any given Shore C value within the known range of Shore C. This is how one of ordinary skill in the art can know the equivalent Shore D or even Shore A hardness value for any given Shore C hardness value.

As stated in the request on page 21

It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the soft outer cover layer of Nesbitt and replace it with an

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outer cover layer made of the soft polyurethane material taught by Molitor '751 to provide a golf ball that includes "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, ll. 61-68)

This rejection of claim 6 based on Nesbitt mentioning Molitor '637 in view of Molitor '751 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

#### Ground 39: Patent Owner's Argument

Patent Owner does not specifically argue this rejection. The arguments are the same as those at "Ground 4: Patent Owner's Argument," *supra*.

#### Ground 39: Third Party Requester's Comments

Third Party Requester does not specifically counter argue this rejection. The counter arguments are the same as those at "Ground 4: Third Party Requester's Comments," *supra*.

#### Ground 39: Examiner's Response to the Argument and Comments

Examiner agrees with the general comments of the Third Party Requester, and the rejection of claim 6 under 35 USC 103(a) as being obvious by Nesbitt in view of Molitor '637 is maintained. See "Ground 4: Examiner's Response to the Argument and Comments," *supra*.

**Proposed third party requester rejection: Ground #40**



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The requester submits on page 67 that claim 6 is unpatentable under 35 U.S.C. § 103(a) as being obvious over Proudfit, U.S. Pat. No. 5,314,187 (Proudfit) in view of Molitor et al., U.S. Pat. No. 4,274,637 (Molitor '637).

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Proudfit in view of Molitor '637.

The below claim chart identifies the new limitations introduced by dependent claim 6.

Claim 6	Proudfit								
wherein the Shore D hardness of said outer cover layer is less than the Shore D hardness of said inner cover layer.	<p>"The inner layer is formed from hard resin material such as ionomer resin, and the outer layer is formed from a soft material such as balata or a blend of balata and other elastomers." (Proudfit, col. 1, ll. 11-16.)</p> <p>"The composition of the inner cover layer is described in Table 6."</p> <p style="text-align: center;"><b>TABLE 6</b></p> <table border="1"> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> </thead> <tbody> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </tbody> </table> <p>(Proudfit, col. 8, ll. 22-30)</p> <p>"...an <b>outer layer of soft material</b> such as balata or a blend of balata and other elastomers." (Proudfit, col. 5, ll. 15-17) This material inherently has a Shore D hardness of less than 64, see the reasoning below.</p>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Composition of Inner Layer of Cover (Parts by Weight)									
Ionomer Type	Blend Ratio								
Sodium- Surlyn 8940	75%								
Zinc- Surlyn 9910	25%								

As shown above Proudfit discloses, teaches and suggests a three-piece golf ball (core, inner layer and outer layer) with the layers within the range of claimed thicknesses each layer made from a material having the mechanical properties substantially similar to the claimed mechanical properties. What Proudfit lacks in clearly disclosing are the particular mechanical and chemical properties of the claimed invention. However, Proudfit either incorporates by reference these mechanical and chemical properties and/or the materials used within the Proudfit golf ball inherently have these mechanical and chemical properties. For instance, Proudfit incorporates by reference U.S. Pat. No. 4,690,981 in the background of this invention. (Proudfit,

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col. 1, ll.39-43). The '981 patent discloses the preferably amount of unsaturated carboxylic acid is "from about 5[%] to about 15% by weight." ('981 Pat, col. 3, ll. 59-60). If Proudfit discloses using blends SURLYN the chemical for making the inner cover and the '981 Patent is the formulation for ionomer known in the art as SURLYN, then inherently grades of SURLYN such as SURLYN 8940 and SURLYN 9910 would be low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid. As taught from Exhibit I, SURLYN 8940 has a Shore D hardness of 65; SURLYN 9910 has a Shore D hardness of 64, see Exhibit I. Therefore, this cover blend inherently has a hardness of 60 or more. Proudfit discloses the outer layer being a blend of balata. An example of the blend is disclosed in Table 7 reproduced below.

TABLE 7	
Composition of Outer Layer (Parts by Weight)	
Trans Polyisoprene (TP-301)	60.00
Polybutadiene	40.00
Zinc Oxide	1.00
Titanium Dioxide	17.00
Ultramarine Blue color	.30
Zinc DiAcrylate	33.00
Peroxide (Varon 230 XL)	2.50
Total	160.00

Note that Trans Polyisoprene is basically the chemical name for balata and Polybutadiene is one of the first types of synthetic rubber or elastomer. As described in the Rule 132 Declaration of Edmund A. Hebert, the outer cover layer disclosed in Proudfit is the outer cover layer for the golf ball disclosed in Exhibit A and that cover has a Shore D hardness of 52. Thus, Proudfit's outer layer cover inherently has a Shore hardness of less than 64.

This rejection of claim 6 based on Proudfit in view of Molitor '637 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.